WORKING CAPITAL MANAGEMENT AND PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI SECURITIES EXCHANGE-KENYA

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Abstract

Working capital management is essential for all manufacturing companies, significantly impacting overall stability and ensuring that available resources are utilized efficiently. Although fixed assets management has been put in place, the manufacturing sector's contribution to Gross Domestic Product decreased to 2.7 percent in 2022, down from 7.3 percent the previous year, as reported by the Kenya National Bureau of Statistics 2023 Economic Survey. The studies carried out on manufacturing firms have focused on the separate impact of financial factors rather than their collective effect. The primary aim of the research was to determine how fixed asset management influences the performance of manufacturing companies listed on the Nairobi Securities Exchange. The study was guided by modern portfolio theory. The focus of the study was nine manufacturing companies listed on the Nairobi Securities Exchange. A correlational research design alongside a multiple regression model was utilized. The census survey was employed to analyze all nine manufacturing companies. Data processing and analysis were conducted using STATA. Descriptive statistics like mean and standard deviation were produced. Inferential statistics included multiple linear regression analysis. Data was displayed through tables, charts, and graphs. The working capital management displayed a positive correlation coefficient of 0.4762. The correlation coefficient for working capital management stood at 0.4102(ROE) and 0.3437(EPS). The findings of the research on working capital management and the performance of manufacturing companies showed an overall R square of 0.4817 with ROE and 0.4574 with EPS. The research is important for the government, policymakers, and managers in manufacturing companies to adjust to financial demands to enhance performance.

Background of the study

Manufacturing has historically been a crucial factor in the economic development of developing nations. Recent discussions suggest that the significance of manufacturing has lessened over the past two to two and a half decades, leading to early deindustrialization or a lack of industrialization in developing countries. Premature deindustrialization or a lack of industrialization has become more apparent in developing nations, where the proportion of manufacturing in GDP peaked at a significantly lower income level compared to early industrialized countries. (Amirapu and Subramanian, 2015).

Working capital as financial imperative has a positive effect on firm earnings in South Africa. There was recommendation for a firm to raise working capital and impart proper control. The management of working capital is essential to a company's financial performance (Louw, et al 2022). In the South African manufacturing companies, financial performance would be impacted by effective working capital management. Since these have an impact on their financial success, sound working capital management procedures must be in place. The manufacturing sector in the East African Community (EAC) was distinguished by significant financial performance due to a rise in well-managed working capital, dividends, capital structure, and fixed asset management. There were sufficient capital and liquidity buffers to deal with both current and future threats (Museleku, 2022).

Problem of the study

Financial imperatives are essential financial elements for a company because they influence the overall stability of the organization. Even with the introduction of several financial imperatives like fixed asset

management, the manufacturing sector's performance has been trending downward. The 2023 Economic Survey by the Kenya National Bureau of Statistics, released on May 3, 2023, indicated that the growth of the manufacturing sector decreased to 2.7 percent in 2022, down from 7.3 percent in the prior year. Numerous manufacturing firms experienced negative working capital, outstanding creditors, and an elevated debt-to-equity capital ratio. The manufacturing sector in Kenya has been growing at a slower pace than the overall economy of the country. The 2024 economic survey (Kenya National Bureau of Statistics) revealed that the manufacturing sector's contribution to gross domestic product (GDP) was 2016-9.3, 2017-8.7, 2018-8.4, 2019-8.4, 2020-7.9, and 2021-7.6. The performance of the manufacturing sector seems to have worsened. The studies conducted by Mutua and Atheru (2020), Purba and Bimantara (2020), Marenya (2020), and Murage and Emba (2019) regarding manufacturing firms have focused on the specific impact of working capital management rather than the overall influence of financial factors. Thus, to determine the impact of managing working capital management on the performance of publicly traded manufacturing companies in Kenya.

Objectives of the study

To examine the effect of working capital management on performance of manufacturing firms in Kenya.

Hypothesis of the Study

There is no significant effect of working capital management on performance of manufacturing firms.

Theoretical Literature Review

This section provides a summary of key theories relating to financial imperatives. The theory was Contingency Theory.

Contingency Theory

Saxberg (1979) who developed contingency theory observed that the efficacy of working capital is greatest where the structure fits the contingencies, hence only firms that align their working capital with the current environment achieve optimal production. The idea goes on to say that there is no amount of working capital and that it is always optimal in each given business.The framework is based on the premise that there is no universally applicable performance management system that applies equally to all companies in all circumstances, but that specific system features and efficacy are dependent on specific organizational and situational elements.

To achieve effectiveness, managers must constantly adapt their businesses' levels and methods to working capital management to changing external conditions. As a result, the Contingency Theory implicitly sees organizations as loosely connected aggregates whose various working capital components can be modified or fine-tuned. To be effective, organizations must change their systems and structures to be compatible with the many eventualities or conditions of their external environment (Islam, 2012).

Contingency theory holds that the efficacy of an organization in dealing with the needs of its environment is dependent on the diverse aspects of its many sub-systems being shaped by the requirements of the environment with which they interact. According to the contingency method, companies will be more effective when there is a match between the organization's contextual elements or contingencies (environment, resources, and management) and its corporate strategy and organizational structure. As a result, an organization's performance is determined by how well the policy it wishes to pursue is matched with its organizational architecture.

This congruence between strategy and performance is referred to as "fit" in strategic management literature (Otley, 2016).

Determination of situation in which managerial action is to be taken involves analysis of a large number of variables with multifarious dimensions. Therefore, there is a possibility that managers, who are always short of time, may ignore the thorough analysis of all these variables and may resort to short-cut and easier way. Contingency approach being complex, presents problems in testing the percepts of the theory. For empirical testing of the theory, it is necessary that some methodology is available. No doubt, methodology is available but because of the involvement of too many factors, testing becomes difficult.

This theory is founded on the argument that an efficient organizational structure is contingent on an organization's context, allowing it to adapt its structure to match the contingencies. No single sort of organizational strategy, according to the theory, is equally appropriate to all organizations. Contingency theory can play a significant role in organizational design by identifying the structures that fit in particular conditions (Gerio & Wahome, 2020).

This study employs contingency theory to explain why environmental, resource, and management variables may affect the link between working capital management and financial performance. The theory provides a clear explanation of the interrelationships between organizational subsystems as well as between the organizational system and its environment. Therefore, this theory is relevant to determine the level of working capital management to approach by taking into account strategically significant external variables such as economic conditions, demographic trends, sociocultural trends, political/legal factors, and industry structure which affect financial performance of listed manufacturing firms.

Conceptual Framework

This section conceptualizes financial imperatives components such as capital structure, asset management, dividend management, and performance. Figure 2.1 represents the conceptual framework used for this study.

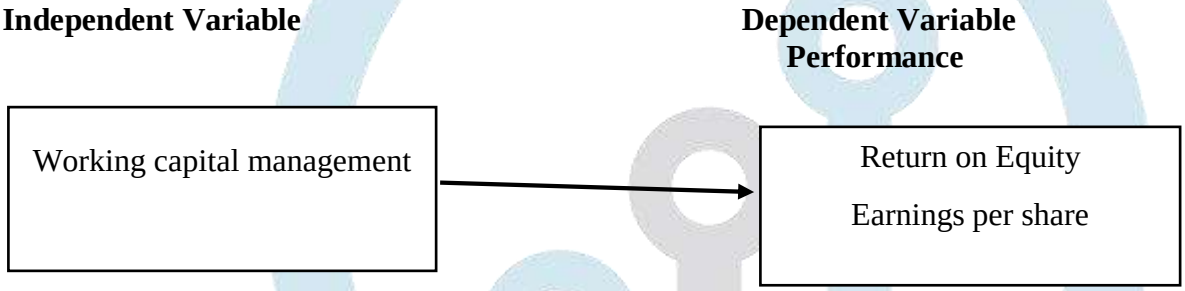

Figure 1-Conceptual framework: Source (Researcher's Conceptualization 2023)

A conceptual framework is a verbal or visual depiction of the relationships between several concepts or variables in a study. It aids researchers in comprehending and elucidating the connections they anticipate discovering among those variables. In essence, it serves as a research plan that directs the gathering and interpretation of data. (Swaen and Tegan, 2024).

Working Capital Management

Working capital is the amount of current assets that is left over after subtracting current liabilities. The key to financial management is working capital management because of the favorable implications it has on institutions' financial performance. The secret to increasing the firm value is developing and implementing a thorough working capital management structure.

Working capital management primary goal is to make sure that the organization's ongoing operations are secure and that it has enough cash on hand to meet its immediate financial obligations (Marenya, 2020).

In order to remain competitive, the company must maintain the proper balance between its assets, liabilities, and working capital. The majority of business-related literature has typically focused on the long-term analysis of financial decisions as well as the success of the corporation. This has made it possible for academics to focus intently on exploring the capital structure, dividend, investments, and business valuations of the organization. Recent surveys have indicated that managers spend a lot of time coming up with solutions for decisions affecting the working capital management of their businesses (Kasozi, 2017).

Working capital management was measured using current ratio. as the best measure for working capital management since it potrays the ability of current assets to service currernt liabilities in the firm.The difficulty in managing cash is striking a balance between the opportunity cost of maintaining too high levels of these resources and the risk of having insufficient finances for operations. Maintaining the balance of cash involves a number of actions, so one of a company's competencies should be the capacity to develop a cash

management strategy that includes synchronizing cash inflows and outflows through cash budgeting and cash forecasting (Ndumia and Omagwa, 2019).

The buying, producing, and marketing processes of a business all depend on effective inventory management. The cycle of company activities is also linked to maintaining adequate inventory levels, and doing so results in inventory-related expenses including ordering, carrying, and stock-out charges. Working capital performance is directly impacted by the inventory management strategy used. While keeping too much stock could result in excessive carrying costs, it also lessens the danger of stock shortages. The credit policy and collection techniques have a significant impact on the management of accounts receivable. Cash inflows, sales, and the risk of bad debts are all impacted by credit policies and collection procedures (Ndumia and Omagwa, 2019).
The current financial and economic crisis in many firms has highlighted how critical it is for businesses to keep their cash positions strong. A credit crunch or an economic downturn always increases the risk of becoming illiquid. Unfortunately, businesses are still unable to accurately predict their cash requirements. Effective working capital and capital structure management aims to boost a company's operational effectiveness and aids in short-term liquidity. As a result, understanding working capital management is crucial for both financial management and general business management (Frankfurt Business Media, 2018).

Manufacturing firms will have very significant financial performance when they put in place a good working capital management system. A corporation can have enough cash flow to cover its short-term debt obligations and operating costs if these factors are managed well. While a company's primary goal is to maximize profitability and boost shareholder value, it is necessary to strike a balance between liquidity and profitability when running day-to-day operations to maintain smooth operation and compliance with the company's obligations (Eljelly, 2014).

Empirical Literature Review

This part reviews the effects of financial imperatives on performance. It reviews previous studies on components of financial imperatives and performance of listed firms.

Working Capital Management and peformance of Manufacturing Firms.

Marenya (2020), researched to establish the influence of working Capital Management on Financial Performance of Manufacturing and Allied Category of Firms Listed at The Nairobi Securities Exchange. Explanatory survey research was used in the study. All listed companies in the manufacturing and related industries that were quoted at the NSE over a period of eleven years made up the population of interest in this study (2006 to 2016). In the manufacturing and related sector category of the NSE, 9 companies were listed. The data for the study obtained from secondary sources and was gathered using a data extraction form. SPSS.v.23.0 was used to evaluate the data that had been gathered. The study employed both descriptive and inferential statistics. Tables were used to present quantitative data. The research study found a positive relationship between working capital management and the financial performance of manufacturing and related category of firms. The study applied explanatory design and analyzed using SPSS version 23. The study did not have latest update of economic trend of performance for manufacturing firms since it covered a period between 2006 and 2016.

Ndumia and Omagwa (2019), did a study to determine the impact of working capital management on the performance of companies listed in the manufacturing and allied industry at the Nairobi Stock Exchange, Kenya. This study used a census sampling technique and a causal research design. Eight companies listed in the manufacturing and allied industry at the Nairobi Stock Exchange in Kenya made up the target population. The audited financial accounts of a particular manufacturing company were used to collect secondary data. Descriptive analysis, multiple regression, and correlation coefficient were all performed using SPSS. The study's conclusions showed that working capital management significantly and positively affected the performance of publicly traded manufacturing firms.

Kasozi (2017),carried out research to determine whether working capital management affected the financial performance of manufacturing companies listed on the Johannesburg Stock Exchange (JSE). An imbalanced panel of 69 manufacturing companies listed between 2007 and 2016 was used to evaluate the association using a panel data methodology and various regression estimators. Census sampling was used in the investigation. Data was gathered from the listed company's audited financial statements. The results of the study showed that working capital management has a positive impact on the financial performance of South African firms. The study was done using data from firms in South Africa. The period covered was between 2007 and 2016 which could not give latest information concerning performance of manufacturing firms.

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Lalah, (2022) affirmed that achieving the best possible balance between the working capital components—cash, accounts payable, accounts receivable, and inventory—is the goal of working capital management. Establishing the impact of working capital management on the financial performance of manufacturing companies listed on the Nairobi Securities Exchange was the main goal of the study.The study specifically examined the impact of the cash conversion cycle, inventory conversion period, account collection period, and account payment period on the aforementioned companies' financial performance. The population of this study, which employed an explanatory research design, consisted of all ten manufacturing companies that were listed on the NSE by December 31, 2016. Seven (7) manufacturing companies were specifically chosen for the study based on their accessible financial statements. Relevant information was taken from the financial statements of the aforementioned companies using a secondary data collecting template. In order to determine means and standard deviations and draw conclusions about the remainder of the population, the acquired data was examined using descriptive statistics. Regression analysis was also employed in the study to determine the link between the independent and dependent variables. The analysis found that, in comparison to 2014, when ROA was at its lowest, the manufacturing sector had the highest ROA in 2015. The firm's profitability suffered as a result of a less aggressive investment in current assets and current liabilities.

Arguments against the impact of working capital on corporate performance claim that excessive or poorly managed working capital can reduce profitability by leading to increased costs and missed opportunities. While working capital is essential for operations, too much of it can tie up funds and reduce profitability, while too little can cause liquidity issues and operational delays. According to a different viewpoint, working capital and profitability are negatively correlated since higher working capital requires more financing, which increases finance and opportunity costs. The performance of the company is adversely affected by poor management and improper working capital management. (Kiymaz, Samina. and Ahmed, 2024). A study by Omwong'a and Ndede, (2023), recommended proper cash budgeting and planning and suggested the creation of cash management strategies to allocate surplus funds for effective maintenance of ideal cash levels. Additional suggestions included modifying the credit policy to facilitate effective and timely tracking of payments received ahead of schedule, pursuing collection attempts for past-due payments, and lowering bad debts, which might impact the firm's liquidity and, consequently, its financial performance.

Research Methodology

Research Philosophy

This research was directed by positivism, with the examined phenomena resulting in the development of reliable data. Scholars employing quantitative methods such as measuring and counting are referred to as positivists. Positivism enables the application of statistical techniques for hypothesis testing to evaluate data collected through quantitative research methodologies (Creswell, 2013).

Research design

The research utilized a correlational research design and employed multiple panel data regression models. The correlational research approach quantitatively outlines the extent to which variables are interconnected. It entails gathering data to assess if and how strongly a relationship exists between two or more quantitative variables. Correlational research is employed to investigate the connections between two or more variables (Devi, Lepcha, & Basnet, 2022).

Target Population

The study's population consisted of nine manufacturing companies that were listed on the Nairobi Stock Exchange as of 31st December 2022 within the manufacturing sector. The reason for its existence is that it is refreshed daily after market closure, allowing individuals to comprehend the adjustments in fixed asset management by examining the prices of individual stocks.

Table 3.1-List of listed Manufacturing firms in Nairobi Securities Exchange

Manufacturing Firm
B.O.C Kenya Ltd
British American Tobacco Kenya Ltd
Carbacid Investments Ltd
East African Breweries Ltd
Mumias Sugar Co. Ltd
Unga Group Ltd
Eveready East Africa Ltd
Kenya Orchards Ltd
Flame Tree Group Holdings ltd

Source: Nairobi securities exchange website (2022).

Sampling Techniques

Census technique was used to collect data because it ensures that accurate data is acquired from the entire population, captures a wide range of a company's demographic statistics, and attributes. Census was also more suitable for a small target population of less than 50 (Cooper & Schindler, 2017). Since the nine number of manufacturing firms is a small number less than 50, the financial performance of Kenya's manufacturing firms was examined using data from all the firms.

Data Collection Instruments

The researcher gathered secondary data from selected manufacturing companies sourced mainly from published financial statements, spanning the period from 2013 to 2022. The researcher analyzed the ratios associated with the variable from the company's financial statements. The financial statements utilized in this research were obtained from the websites of listed manufacturing companies and the capital market authority. The research employed a data gathering form.

Data Collection Procedure

Secondary data was collected using the Nairobi Securities website the published audited annual financial statement. The researcher used panel sheet in collecting the information. The panel data included cross-sections and time series. The research covered ten years from 2013 to 2022, whereas the cross-sectional data was drwn from 9 manufacturing firms listed at the NSE.

Data Analysis and Presentation

Data was transferred from an Excel spreadsheet to STATA for examination. Analysis was conducted on both descriptive and inferential statistics. Descriptive statistics were conducted using the mean, standard deviation, minimum, and maximum values to evaluate the study variables across a decade from 2013 to 2022. Descriptive statistics summarize the data set, offering an overview of the central tendency, variability, and range of values for each variable being analyzed. The mean indicated the average value, providing insights into the standard performance levels. The standard deviation showed the level of variation or spread in the data, emphasizing the stability or fluctuations of the financial metrics. The minimum and maximum figures showed the span in which the data points exist, reflecting the limits of the performance metrics.

The inferential statistics comprise of correlation analysis, diagnostic tests, and the Hausman test for fixed and random effects. The study will use the following regressions models;

$ROE_{it} = \beta_0 + \beta_1 WCM_{it} + \varepsilon_{1it}$ ……...(1)

$EPS_{it} = \beta_0 + \beta_3 WCM_{it} + \varepsilon_{1it}$ ……...(2)

Where;
ROE –Return on Equity=Net Income/ Shareholders Equity
EPS represents Earnings per share
β0 – Constant in the model without firm size.
β1– Regression coefficient
WCM– Working capital Management
i – Denotes the manufacturing firms
t – Represents the time dimensions from 2013 to 2022
ε it– The error term
To establish the effectiveness of the regression model, the following diagnostic tests will be conducted.

Test for Normality

The normality test was conducted to assess whether the data followed a normal distribution, a key assumption in regression analysis. Normality ensures that parametric tests, such as linear regression, yield unbiased and efficient estimates. The Shapiro-Wilk test was used to test for normality due to its reliability, particularly for smaller datasets (Shapiro and Wilk, 1965). The null hypothesis (H_0) for the normality test was that the data is normally distributed. If the p-value was less than 0.05, the null hypothesis was rejected, indicating that the data was not normally distributed. Conducting this test was crucial because non-normality can impact the validity of the regression model and affect hypothesis testing and confidence intervals. The results of a normality test indicate whether or not the sample data came from a population that was normally distributed. It is typically carried out to confirm that the research's data had a normal distribution.

Residual Normality

Residual normality refers to whether the residuals (errors) from the regression model are normally distributed. In this study, it was necessary to test residual normality because if residuals deviate from normality, it could lead to biased estimates and invalid conclusions about the effect of capital structure management on performance (Knief & Forstmeier, 2021). In this study, the **Shapiro-Wilk test** was used to test for normality. The test was chosen to measure residual normality due to its sensitivity to small sample sizes and ability to detect deviations from normality. The null hypothesis for this test is that the residuals are normally distributed. The rejection criteria are the same as above: a p-value below 0.05 indicates non-normal residuals (Knief & Forstmeier, 2021).

Multicollinearity Test

The study conducted a multicollinearity test to determine whether the independent variables in the model were highly correlated. High multicollinearity makes it challenging to distinguish the individual effects of the independent variables and inflates the variance of coefficient estimates. The Variance Inflation Factor (VIF) was used for this test, with values above 10 indicating significant multicollinearity (Jong, 2019). VIF was chosen because it provides a direct measure of how much the variance of a regression coefficient is inflated due to multicollinearity. This test is essential to ensure that the model's independent variables provide distinct and reliable contributions to explaining the dependent variable. The existence of this phenomenon may seriously restrict the research study's conclusions and have a detrimental effect on the results. How well one independent variable can be represented by the other independent variables is tested using multicollinearity.

Stationarity Test

Stationarity test was conducted to ensure that time series data (if used) did not exhibit trends or changes over time, as non-stationary data could lead to spurious relationships in regression models. The Levin-Lin-Chu (LLC) test was employed for this purpose, testing for unit roots, which indicate non-stationarity. The LLC test was chosen because it is designed for panel data and effectively handles stationarity testing across firms and time periods (Jarolava & Wagner, 2005). The null hypothesis (H_0) was that the data had a unit root (non-stationary), with a p-value of less than 0.05 suggesting that the data was stationary. This test was necessary to prevent misleading statistical relationships in time series analysis (Sekaran & Bougie, 2010). Testing for stationarity is a crucial first step in time-series analysis that helps guide more pertinent analyses later on.

Test for Autocorrelation

The study also performed an **autocorrelation test** to detect whether the residuals were correlated across time, as autocorrelation violates the assumption of independence of errors and can lead to biased estimates (Neville, Simsek &Jensen, 2004). The **Wooldridge test** was used, with the null hypothesis (H_0) that there was no autocorrelation in the residuals. The Wooldridge test was chosen because it is specifically designed for panel data and is widely accepted for detecting autocorrelation in longitudinal datasets. A p-value below 0.05 indicated the presence of autocorrelation. This test ensured the independence of the residuals over time, improving the accuracy of the model's estimates (Kenton, 2021). When modeling and projecting future values of a time series, autocorrelation plays a crucial role in spotting patterns and linkages in the data.

Hausman Test

The Hausman Test detects endogenous regressors (predictor variables) in a regression model. Endogenous variables have values that are determined by other variables in the system. Endogeneity occurs when a predictor variable (x) in a regression model is correlated with the error term (e) in the model (Ait-Sahalia, & Xiu, 2019).

The Hausman test can be used to differentiate between fixed effects model and random effects model in panel analysis. When choosing a model for panel data, consideration must be given to the exogeneity of the independent variables as well as their specific components. A random effects model, also called a variance components model, is a statistical model where the model parameters are random variables. Fixed-effects models are a class of statistical models in which the levels (i.e., values) of independent variables are assumed to be fixed (Patrick, 2021). Finding endogeneity in the explanatory variables is necessary to test if the fixed or random effects model is more appropriate. The random effects model provides the most accurate linear, unbiased estimates when applied correctly. They are impartial, effective, and constant. The fixed effects model would be favored over the random effects model if there was a correlation between the error term of the random effects model and the independent variables, as this would lead to inconsistent estimates. If any factors are left out that the fixed effect model is robust for, the individual-specific component $\boldsymbol{\alpha}$ may be associated with the independent variables in the random effects model. The accuracy of the Hausman test is an important issue in panel data analysis. The value that must be considered in the Hausman Test is the probability value of a random cross-section (Borensteina et al., 2010). Whenever there is a clear idea that individual characteristics of each entity or group affect the regressors, use fixed effects. Random effects are used whenever there is reason to believe that individual characteristics have no effect on the regressors. This test was used in the research to find out whether there is any endogeneity in the independent variables with the error term. Hausman test determines whether to employ fixed or random model that fits the data.

Heteroscedasticity

This is the case when the variance of the error term varies between observations. It produced p-values that are lower than predicted and could skew and undermine the reliability of the regression coefficient (Jong, 2019). The model's residues are not heteroscedastic, according to the null hypothesis. To determine whether there was heteroscedasticity or not, the Breusch Pagan test was applied. The Breusch-Pagan test was chosen because it is a common and reliable method for detecting heteroscedasticity in regression models. If the computed probability of the chi-square is less than 0.05, the residues are heteroscedastic, and they are homoscedastic if the calculated probability is larger than 0.05. It is important to make sure the residuals have a constant variance when examining the regression findings. Heteroskedasticity is present when there is an unequal variance detected in the residuals. This test was used in the research to test whether there is variance of the error term between observations. Heteroscedasticity may be caused by the presence of outliers in the data set, gathering information at various scales, inappropriate model specification, inappropriate transformation technique being used to the model's representation. Every one of the scenarios listed above has the potential to alter the outcomes of an efficient solution. Therefore, heteroskedasticity in the model violates the ordinary least square (OLS) regression assumption and tends to produce biased findings.

Measurement of Variables

Table 3.2-Measurement of Variables

Variable	Formula	Researcher
Working capital management	Current Assets/ Total Liabilities	Marenya,2020

DATA ANALYSIS, RESULTS AND DISCUSSION

Introduction

This section discusses on the study's findings. Descriptive statistics for statistical analysis, diagnostic tests to determine the adequacy of the data for statistical analysis, regression model estimate, were included in the data analysis.

2 Normality Test

In panel regression analysis, normality test was conducted to ensure the assumption of a normal distribution for the residuals, as required under the framework of linear regression. Specifically, the Shapiro-Wilk test was employed to assess whether the residuals from the panel regression model adhered to a normal distribution. The null hypothesis of this test shows that the residuals are normally distributed. The null hypothesis is not rejected when the p values are greater than 0.05 but is rejected when they are less than 0.05. The results are presented in Table 4.1

Table 4.1-Shapiro Wilk Test for Normality

Variable	Obs	W	V	Z	Prob>z
WCM	90	0.9785	1.624	1.070	0.1423
ROE	90	0.9764	1.784	1.276	0.2276
EPS	90	0.9657	1.793	1.281	0.2167

Source: Study data, 2024

The Shapiro Wilk test Table 4.1) showed that all the W values were closer to 1 for all the study variables. The results also show that all the Z values were less than the critical Z value of 1.96 and all the probability values were more than the significance value of 0.05. Therefore, the study failed to reject the null hypothesis because data was normally distributed and concluded that data from all the study variables were normally distributed.

4.3 Descriptive Statistics

Descriptive statistics was done with the help of mean, standard deviation, minimum, and maximum statistics to analyze the study variables over a ten-year period from 2013 to 2022. Table 4.2 showed the results of descriptive statistics.

Table 4.2-Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
WCM	90	0.4907	0.2322	0.03182	0.9675
ROE	90	0.4219	0.2653	-0.5473	0.95198
EPS	90	5.1593	1.981	-4.43	28.92

Source: Study data, 2024

Working capital management and performance of manufacturing firms

The descriptive statistics for working capital management, measured using the liquidity ratio, showed a mean of 0.4907, a standard deviation of 0.2322, a minimum value of 0.03182, and a maximum value of 0.9675, based on 90 observations. The mean liquidity ratio of 0.4907 indicated that, on average, manufacturing firms maintained a moderate level of liquidity, suggesting a balanced approach to managing current assets and liabilities to ensure they can meet short-term obligations and thus adhere to contingency theory. The standard deviation of 0.2322 reflected considerable variability in liquidity management practices among the firms. The minimum value of 0.03182 indicated that some firms like B.O.C Kenya ltd,2019 faced significant liquidity challenges, possibly struggling with cash flow issues or inefficiencies in managing receivables and payables. In contrast, the maximum value of 0.9675 showed that some firms like Unga ltd, 2017 maintained a high level of liquidity that tie up funds and reduce profitability. This wide range in liquidity ratios highlighted the diverse financial strategies and risk management practices within the manufacturing sector. Analyzing these patterns was crucial for understanding how different approaches to working capital management affected firm performance, influencing operational efficiency, financial stability, and overall profitability. Identifying effective liquidity management practices could offer valuable insights for enhancing a firm's ability to sustain operations and achieve long-term financial success. There was a similar relationship of the findings with those of Marenya, 2020 and Kasozi, 2017 which differed in their research methodology and country for Kasozi's study in Johannesberg where the policies and laws are very different from that of Kenya.

Correlation Analysis

The study conducted correlation analysis to establish the strength and direction of relationships between various financial imperatives and the performance of manufacturing firms. Using Pearson product moment correlation at a 95% confidence interval, the study assessed how capital structure management, fixed asset management, dividend management, working capital management, financial risk management, and firm characteristics influence firm performance. Pearson correlation coefficients were employed to quantify these relationships, indicating whether better firm performance outcomes were associated with improvements in financial imperatives. The correlation coefficient values range from +1 to -1. Positive correlations would suggest that effective management of these financial imperatives contributed positively to performance. The results were shown in Table 4.3

Table 4.3-Correlation Analysis

Variable	ROE	EPS	WCM
ROE	1.000	0.2721	
		0.001	
EPS		1.000	
WCM	0.4762	0.3162	1.000
	.0054	0.0011	

Source: Study data, 2024

Working capital management had a positive correlation with financial performance, as indicated by a coefficient of 0.4752 and a p-value of 0.0054<0.05. The success of manufacturing companies and working capital management have a somewhat favorable link, as indicated by the correlation value of 0.4752. This implies that there is a propensity for manufacturing companies' financial performance to improve in tandem with advancements in working capital management techniques. The management of current assets and liabilities is crucial in sustaining financial health. This indicates that, although working capital management is a factor in the framework of contingency theory, its effects are not always relevant and are probably impacted by other elements inside the particular organization and its surroundings. The results were in agreement the findings of Soda, Makhlouf, Oroud & Omari, (2022), Palash, Suvendu,Sarv & Preetam,(2024).

The correlation coefficient between earnings per share (EPS) and working capital management is 0.3162 with a p-value of 0.00011, indicating a moderate positive relationship. Ndumia and Omagwa (2019) demonstrated that efficient working capital management leads to improved liquidity, ensuring that firms can meet their operational needs and capitalize on opportunities, thereby enhancing profitability. The positive correlation in this study suggested that firms with effective working capital management are likely to experience an increase in EPS. This result supported the idea that maintaining an optimal balance of working capital can lead to better financial outcomes and higher EPS in manufacturing firms. Regarding working capital management (WCM), the results show a fair positive correlation with ROE (0.4752) and EPS (0.3162), confirming that liquidity management directly impacts operational continuity and profitability. Previous works such as Soda et al. (2022) supported this, yet my research adds a policy dimension by arguing for sector-specific liquidity benchmarks to guide manufacturing firms. The implication is that theoretical frameworks like contingency theory, which posits that management strategies should align with operational context, are validated here, especially for firms navigating volatile markets and supply chains.

Diagnostic Test Results

In the analysis of panel regression, it is essential to assess if the model passes all diagnostic tests based on the linear regression assumption. Five diagnostic assessments were performed to evaluate the normality of residuals, multicollinearity, heteroscedasticity, autocorrelation, and stationarity.

Test of normality of residuals

Normality tests of residuals are always conducted to ensure residuals are normally distributed, which is critical for validating the adequacy of the model fit, stability, and dependability in the study. The Shapiro-Wilk Test was employed. The null hypothesis of Shapiro Wilk test states that the residuals are normally distributed. If the data is not normally distributed, it could lead to unreliable and biased results affecting the study's conclusions. The results of the Wilk test shows that the W-values is equal to 1, V-values, Z-values smaller than the Z-critical value of 1.96, and probability values greater than 0.05 implied normal distribution of residuals. The results were presented in Table 4.4.

Table 4.4-Shapiro Wilk test for Residuals

Variable	Obs	W	V	Z	P-value
Residuals	90	0.98611	0.891	0.217	0.31061

Source: Study data, 2024.

The results of the Shapiro-Wilk Test for residuals from Table 4.4 showed 90 observations, a W value of 0.98611, a V value of 0.891, a Z value of 0.217, and a p-value of 0.31061. These results implied that the residuals were normally distributed, as the W value was close to 1, the Z value was significantly smaller than the Z-critical value of 1.96, and the p-value was greater than 0.05. Therefore, the null hypothesis, which states that the residuals are normally distributed, was not rejected. This indicated that the assumptions of normality hold true for the residuals, suggesting that the model fit, stability, and dependability were adequate for analyzing the effect of fixed asset management on the performance of manufacturing firms.

Test of multicollinearity

This occurs when there is a significant correlation between two or more independent variables in the regression model. Multicollinearity decreases the estimated coefficient, which may reduce the regression model's statistical power because it is challenging to rely on p-values to identify statistically significant independent variables (Jong, 2019). The Variance Inflation Factor (VIF) was used to assess the degree of multicollinearity. Multicollinearity is present when the VIF value is greater than 10, but it is absent when the VIF value is less than 10. The test was used in the study to establish whether there was any significant correlation between the independent variables. It was necessary to detect and address multicollinearity to ascertain the validity and robustness of regression models. The results are shown in Table 4.5

Table 4.5-Test of multicollinearity

Variable	VIF	1/VIF
WCM	1.03	0.9675

Source: Study data, 2024

The results in Table 4.5 showed that working capital managementt had VIF values of 1.03. Since multicollinearity is considered present when the VIF value exceeds 10 and absent when it is less than 10, these results indicated that multicollinearity was not present in the study. Consequently, the null hypothesis, which showed that there was no multicollinearity among the independent variable, was not rejected. The absence of multicollinearity implied that the independent variable were not highly correlated, thus ensuring the reliability and validity of the regression coefficients. This contradicts some earlier claims, such as those by Otieno (2017), who argued that multicollinearity is an inevitable issue in financial models involving closely related constructs. However, the absence of multicollinearity in this study allowed for precise interpretation of fixed asset management effect, something that previous studies may have compromised due to unresolved inter-variable correlations.

Test of Autocorrelation

Autocorrelation measures how similar a specific time series is to a delayed version of itself across consecutive time intervals. Autocorrelation assesses the connection between a variable's present value and its previous values. Autocorrelation takes place when the error terms in regression models show correlation across time series. The autocorrelation test confirmed that the R2 was not inflated to present a superior fit than its actual value (Kenton, 2021). The research employed the Wooldridge test to assess the presence of autocorrelation. The null hypothesis indicates that the panel data lack serial correlation. The null hypothesis remains accepted if there's no serial autocorrelation in the panel data and the Wooldridge test's p-values exceed the 0.05 significance level. This examination would be utilized in the research to assess the panel data to determine if it arises when the error term in the regression model is correlated across time series. The findings were shown in Table 4.6.

Table 4.6-Test of Autocorrelation

Wooldridge test for Autocorrelation
H_{01}: No serial correlation
F (1, 7) = 0.06
Prob> F = 0.5128

Source: Study data, 2024

The findings in Table 4.6 indicated that the Wooldridge test for autocorrelation yielded an F value of 0.06 and a p-value of 0.5128. The Wooldridge test's null hypothesis suggested that the residuals exhibited no first-order autocorrelation. Since the p-value exceeded the typical significance threshold of 0.05, the null hypothesis was not discarded. This suggested that there was no substantial proof of autocorrelation in the residuals. The lack of autocorrelation indicated that the residuals were not dependent on one another, confirming the reliability and validity of the regression model. This outcome strengthened the reliability of the study's conclusions, validating that the estimates regarding the impact of fixed asset management on manufacturing firms' performance were unaffected by autocorrelation problems.

Test for heteroscedasticity

This is the case when the variance of the error term varies between observations. It produces p-values that are lower than predicted and could skew and undermine the reliability of the regression coefficient (Jong, 2019). The model's residuals were not heteroscedastic, according to the null hypothesis. To determine whether there was heteroscedasticity or not, the Breusch Pagan test was applied. If the computed probability of the chi-square is less than 0.05, the residuals are heteroscedastic, and they are homoscedastic if the calculated probability is larger than 0.05. It is important to make sure the residuals have a constant variance when

examining the regression findings. Heteroscedasticity is present when there is an unequal variance detected in the residuals. This test was used in the research to test whether there was variance of the error term between observations. The findings from the Breusch-Pagan test, supported by scatter plot diagnostics, revealed no significant presence of heteroscedasticity in the regression model, with p-values (0.2917 for ROE and 0.2525 for the independent variables) exceeding the 0.05 significance threshold. This suggests that the variance of residuals is constant across observations, ensuring unbiased and efficient regression coefficients. Unlike earlier studies on manufacturing firms in Kenya that have either overlooked heteroscedasticity diagnostics or applied less rigorous methods such as informal graphical assessments, this study adopts a more statistically sound and confirmatory approach by using both the Breusch-Pagan test and visual validation. This methodological duality improves upon previous works by strengthening the internal validity of the model. Moreover, the absence of heteroscedasticity allows for a more credible interpretation of the influence of fixed asset management across firms of varying sizes and operational scales an aspect often neglected in generalized or sector-agnostic studies. The results were shown in Table 4.7.

Table 4.7-Breusch-pagan/Cook-Weisberg for heteroscedasticity

Ho: Constant variance
Variables: fitted values of ROE
chi2(1) = 11.45
Prob > chi2 = 0.2917

Source: Study data, 2024

The results in Table 4.7 showed that the Breusch-Pagan test for heteroscedasticity, with the dependent variable financial performance measured using Return on Equity (ROE), resulted in a chi-squared value of 11.45 and a p-value of 0.2917. The null hypothesis for the Breusch-Pagan test indicated that there was homoscedasticity, meaning the variance of the residuals were constant. Since the p-value was greater than the conventional significance level of 0.05, the null hypothesis was not rejected. This indicated that there was no significant evidence of heteroscedasticity in the residuals. The absence of heteroscedasticity implied that the variance of the errors was constant across observations, ensuring the reliability and consistency of the regression coefficients. This result validated the robustness of the study's findings, confirming that the estimates of the effect of fixed asset management on the performance of manufacturing firms were not biased by heteroscedasticity issues.

Heteroscedasticity for independent variable “fixed asset management was also tested and the results presented in Table 4.8

Table 4.8-Breusch-pagan/Cook-Weisberg test for heteroscedasticity

Ho: Constant variance
Variables: fitted values of CSM FAM DM WCM FRM FC
F (6, 83) = 3.415
Prob > F = 0.2525

Source: Study data, 2024

The results in Table 4.8 showed that the Breusch-Pagan test for heteroscedasticity, applied to the independent variables fixed asset management resulted in a chi-squared value of 3.415 and a p-value of 0.2525. The null hypothesis for the Breusch-Pagan test indicated that there was homoscedasticity, meaning the variance of the residuals was constant. Since the p-value was greater than the conventional significance level of 0.05, the null hypothesis was not rejected. This indicated that there was no significant evidence of heteroscedasticity in the residuals associated with the independent variables. The absence of heteroscedasticity implied that the variance of the errors was constant across observations, ensuring the reliability and consistency of the regression coefficients. This result validated the robustness of the study's findings, confirming that heteroscedasticity issues did not bias the estimates of the effect of financial imperatives on the performance of manufacturing firms.

Levin Len Chu test

The study employed Levin-Len Chu test to test for stationarity. Probability values lower than 0.05 indicates that the null hypothesis is not accepted. This test was useful in the study to establish the stability of the values that do fluctuate over time. The results are shown in Table 4.9.

Table 4.9-Levin Lin Chu test

Variable	Obs	Unadjusted t	Adjusted t*	p-value
WCM	90	-8.8917	-5.0469	0.0000
ROE	90	-10.2778	-6.9358	0.0000
EPS	90	-10.7811	-7.2161	0.0001
ADF regressions: 1 lag				
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)				

Source: Study data, 2024

Table 4.9 above presents the findings of the Levin Lin Chu stationarity test conducted in the study. The p-values for fixed asset management, return on equity, and earnings per share were all below the 0.05 significance level, suggesting that we reject the null hypothesis and determine that the panel lacked a unit root.

The findings from the Levin-Lin-Chu (LLC) test showed compelling evidence that the main variables in the research fixed asset management and financial performance indicators (ROE and EPS) were stationary at level, as reflected by p-values significantly lower than the 0.05 threshold. This result disproves the unit root null hypothesis and verifies that the data series varies around a stable mean over time, supporting the application of panel regression without differencing. In contrast to earlier research that either presumed stationarity or relied on less stringent unit root tests such as the Augmented Dickey-Fuller (ADF) test alone, this analysis utilized the LLC test within a panel framework, guaranteeing more robust and dependable outcomes appropriate for multi-firm time series data. This holds significant importance in the Kenyan manufacturing sector, where data at the firm level often shows volatility due to changing economic and policy conditions. The stationarity of the variables enhances the model's internal consistency and guarantees that the relationships found between fixed asset management and firm performance are not misleading.

Fixed and Random Effects of financial imperatives and performance (Return on Equity) of manufacturing firms

The multiple regression model for this study was determined by comparing fixed and random effects. The Hausman test was used to choose either fixed or random effect models to use.

Hausman test results

In panel data analysis, selecting between a fixed and a random effects model is essential. Hausman testing is frequently used to differentiate between fixed and random effect models. The null hypothesis of Hausman tests is that random effects model is appropriate for the study. The results of the Hausman specification test results without intervening variable were displayed in Table 4.10.

Table 4.10-Hausman tests results

Variable	(b) Fixed	(B) Random
FAM	.3513	.4102
b=consistent under Bo and Ba; obtained from xtreg		
B= inconsistent under Ba, efficient under Bo; obtained from xtreg		
Test: Bo: difference in coefficients not systematic		
$Chi^2(3)$ = (b-B') [(v_b-v_B)9-1)](b-B) =2.31		
Prob>chi^2=0.3404		

Source: Study data 2024

According to Table 4.10- Hausman test results, the chi2 was statistically insignificant with a P-value of 0.3404 at the 5% level of significance. The study concluded that the random effect model was appropriate for the research because it was unable to reject the null hypothesis. In order to derive a regression model that evaluated the effect of capital structure management on performance of manufacturing firms in Kenya, the study used a random effect model.

Fixed and Random Effects of financial imperatives and performance (Earnings per Share) of manufacturing firms

Fixed and random effect was used to determine the multiple regression model of financial imperatives and performance of manufacturing firms when measured using Earnings per share.

Hausman test results

The Hausman test assesses whether a fixed effects model or a random effects model is better suited for a specific dataset in panel data analysis. It assists in choosing between the two models by examining if there are notable differences in the coefficients calculated by each model. The Hausman test's null hypothesis states that the random effects model is both consistent and efficient, indicating that the estimates from the fixed and random effects models do not differ significantly. The outcomes are presented in Table 4.12.

Table 4.11-Hausman test

Variable	(b) Fixed	(B) Random
FAM	**.3516**	**.3028**

b=consistent under Bo and Ba; obtained from xtreg
B= inconsistent under Ba, efficient under Bo; obtained from xtreg
Test: Bo: difference in coefficients not systematic
$Chi^2(3)$ = (b-B') [(**v_b-v_B)9-1)](b-B) =2.13**
Prob>chi^2**=0.3061**

Source: Study data 2024

The effects of working capital management on performance (Return on Equity) of manufacturing firms

A panel regression analysis was carried out to examine the relationship between fixed asset management and the financial performance of manufacturing firms in Kenya. Table 4.14 displayed the results of this panel regression analysis.

Table 4.12-Random effects model results

Variable	**Coef.**	**Std. Err.**	**Z**	**P>/z/**
WCM	0.4102	0.0214	19.16	0.000
Con	0.1012	0.0165	6.13	0.000
R-sq:				
Within = 0.4817				
Between =0.5216			Wald $chi^2(3)$	=49.16
Overall =0.4817			Prob>chi^2	=0.0000

Source: Study data 2024

The study used random effect model to develop a panel regression equation. The results were presented in equation 1 below.

ROEit = 0.1012 + 0.4102WCMit……...(1)

ROE represents return on Equity

FAM represents fixed asset management

The regression model (1) showed that the constant 0.1012 suggested that the financial performance, as measured by ROE, of manufacturing companies would reach 10.12%.

The findings indicated that the overall study model achieved statistical significance. This was demonstrated by a Prob > chi2 of 0.0000, which was less than the significance level of 0.05. The findings revealed an overall R square value of 0.4817. This indicated that 48.17% of the variation in the financial performance of

manufacturing companies was accounted for by the random effect model, which incorporated financial imperative as fixed asset management. Additional variables not represented in the regression model explained 51.83% of the variance in the performance of manufacturing companies. Consequently, the model accounted for just 48.17% of the variation in the financial performance of manufacturing companies. The financial imperatives may not have delivered significant returns because of inadequate implementation of these factors by the companies.

The research reveals that financial factors account for 48.17% of the variations in Return on Equity (ROE) across manufacturing companies in Kenya, which is both theoretically significant and practically insightful. From a theoretical angle, this outcome corresponds with Modern Portfolio Theory, which suggests that companies should direct resources towards strategies that optimize returns while reducing risk. Importantly, the major impact of working capital management and fixed asset management strengthens the case that effective use of short-term assets and tangible resources are vital factors for profitability. The relatively low R-square indicates that although financial imperatives are significant, their influence may be limited by inadequate implementation or contextual elements like market volatility, company size, and management skills that the model does not account for. For example, while capital structure is theoretically anticipated to improve performance via tax shields and leverage advantages, my results indicate a detrimental impact, reflecting criticisms that, in developing economies like Kenya, excessive dependence on debt heightens financial vulnerability instead of enhancing returns. This questions Western-focused beliefs in the capital structure-performance discussion and provides fresh, context-relevant perspectives to the conversation.

The objective of the study was to establish the influence of working capital management measured in terms of fixed asset turnover ratio on the performance of manufacturing firms. The null hypothesis of this objective was that working capital management had no significant influence on the performance of manufacturing firms. Table 17 showed that fixed asset turnover ratio had a positive and significant effect on the performance of manufacturing firms. This was supported by regression coefficients of 0.4102 with P-values of 0.001<0.05 and Z-statistics 6.58 greater than the Z-critical of 1.96, implying that fixed assets turnover ratio had a positive and significant effect on performance of manufacturing firms, thus rejecting the null hypothesis.

The effects of financial imperatives on performance (Earnings per Share) of manufacturing firms

Panel data regression was analyzed to determine the effects of fixed asset management on the financial performance measured using earnings per share of manufacturing firms in Kenya. The findings were presented in Table 4.16.

Table 4.13-Random effects model results

Variable	Coef.	Std. Err.	Z	P>/z/
WCM	0.3028	0.0221	13.71	0.004
Con	3.2139	0.3453	9.31	0.001
R-sq:				
Within = 0.4567				
Between =0.4963			Wald $chi^2(3)$	=46.62
Overall =0.4574			Prob>chi^2	=0.0000

Source: Study data 2024

The random effect model above was used to determine panel regression equation below;

EPSit =3.2139+ 0.2166FAMit ……...(2)

EPS represents Earnings per share

WCM represents working capital management

The effects of financial imperatives on performance (Return on Equity) of manufacturing firms without Intervening variable of firm characteristics

A panel regression analysis was carried out to examine the relationship between financial imperatives (capital structure management, fixed asset management, dividend management, working capital

management, and financial risk management) and the financial performance of manufacturing firms in Kenya. Table 4.14 displayed the results of this panel regression analysis.

Table 4.14-Random effects model results

Variable	Coef.	Std. Err.	Z	P>/z/
CSM	-0.2734	0.1279	-2.14	0.000
FAM	0.3146	0.0478	6.58	0.001
DM	0.2310	0.0291	7.90	0.000
WCM	0.4102	0.0214	19.16	0.000
FRM	0.1942	0.0273	7.11	0.000
Con	0.1012	0.0165	6.13	0.000
R-sq:				
Within = 0.4817				
Between =0.5216			Wald $chi^2(3)$	=49.16
Overall =0.4817			Prob>chi^2	=0.0000

Source: Study data 2024

The study used random effect model to develop a panel regression equation for the model variable. The results were presented in equation 1 below.

ROEit = 0.1012 + 0.4102WCMit+ε1it……...(1)

ROE represents return on Equity

WCM represents working capital management

The constant 0.1012 from the regression model (1) indicated that the financial performance measured

5 Working capital management and performance of manufacturing firms

The fourth specific objective of the study was to establish the effects of working capital management measured in terms of liquidity ratio on the financial performance of manufacturing firms. The null hypothesis of this objective was that working capital management had no significant effect on the performance of manufacturing firms. Table 4.14 showed that liquidity ratio had a positive and significant effect on the financial performance of manufacturing firms. This is supported by regression coefficients of 0.4102 with P-values of 0.000<0.05 and Z-statistics 19.16 greater than the Z-critical of 1.96, implying that liquidity ratio has a positive and significant effect on financial performance of manufacturing, thus rejecting the null hypothesis.

These results implied that a percentage increase in liquidity ratio would lead to a subsequent increase in return on equity by 41.02%. Increase in liquidity ratios indicated that a company has adequate assets readily available to cover its short-term liabilities. This reduces the risk of financial distress or default, which can lead to more stable operations and a lower probability of investment losses. However, a firm needs to make sure that it does not have too much cash at hand that is not generating income.

A working capital increase that results in a performance level of return on equity (R.O.E) of 0.4102 in relation to contingency theory implies a positive link, but not necessarily a strong one. Contingency theory highlights that a company's best course of action is contingent upon its unique set of circumstances. Although the connection isn't very high, the 0.4102 performance level in this instance shows that the growth in working capital is influencing the company's performance. Although this might indicate that the company is successfully managing its working capital, there might be more variables influencing its performance. In the realm of working capital management, the average liquidity ratio pointed to a cautious but flexible financial stance. The results support the contingency theory, which asserts that optimal liquidity levels depend on contextual factors. Nevertheless, unlike Kasozi (2017) whose South African study suggested minimal liquidity as optimal, this research demonstrates that in the Kenyan context, moderate liquidity improves operational continuity. This reflects a unique contribution, illustrating that liquidity strategies must be adapted to local economic and regulatory conditions. From a policy perspective, firms should be guided toward maintaining strategic liquidity buffers that mitigate financial shocks without tying up excessive capital. The policy implication here is that manufacturing firms should adopt a risk-adjusted liquidity threshold tailored to firm-specific characteristics such as size, age, and ownership structure. Larger or

publicly listed firms may afford to maintain leaner liquidity buffers due to better access to credit markets, while younger or privately held firms may require higher liquidity reserves for resilience. These findings also provide theoretical value by contributing to the ongoing debate on optimal liquidity management within the broader context of financial imperatives—alongside capital structure, asset utilization, and dividend policy—offering a more holistic perspective on the drivers of performance in Kenya's manufacturing sector.

The effects of financial imperatives on performance (Earnings per Share) of manufacturing firms without an intervening variable of firm size

Panel data regression was analyzed to determine the effects of financial imperative variables (capital structure management, fixed asset management, dividend management, working capital management, and financial risk management) on the financial performance measured using earnings per share of manufacturing firms in Kenya. The findings were presented in Table 4.15.

Table 4.15-Random effects model results

Variable	Coef.	Std. Err.	Z	P>/z/
WCM	0.3028	0.0221	13.71	0.004
Con	3.2139	0.3453	9.31	0.001
R-sq:				
Within = 0.4567				
Between =0.4963			Wald $chi^2(3)$ =46.62	
Overall =0.4574			Prob>chi^2 =0.0000	

Source: Study data 2024

The random effect model above was used to determine panel regression equation below;

EPSit=3.2139+0.3028WCMit+ε1it……...(3)

EPS represents Earnings per share

WCM represents working capital management

Working capital management and performance of manufacturing firms

From Table 4.16, working capital management, measured in terms of the liquidity ratio, had a regression coefficient of 0.0221, a Z value of 13.71, and a p-value of 0.004. To assess whether working capital management significantly affects financial performance, we compare the Z value with the critical value of 1.96 and the p-value with the critical value of 0.05. Since the Z value (13.71) is greater than the critical value of 1.96 and the p-value (0.004) is less than 0.05, we reject the null hypothesis. This means that working capital management, as measured by the liquidity ratio, has a statistically significant positive effect on the financial performance of manufacturing firms, as measured by earnings per share (EPS).

The finding that working capital management, as measured by the liquidity ratio, positively affects the financial performance of manufacturing firms in Kenya—improving earnings per share by 30.28%—is a significant contribution to understanding short-term financial health within this sector. Unlike some prior studies that largely focused on isolated financial ratios or generalized firms across different contexts, my research explicitly situates working capital management within a broader framework of financial imperatives, including capital structure, asset management, dividend policy, and risk management. This integrative approach allows for a nuanced understanding of how liquidity management interacts with other financial strategies to influence firm performance. However, while the findings of the study align with Contingency Theory, which stresses the fit between strategy and environment, it is important to acknowledge opposing perspectives. Some scholars warn that excessively high liquidity can signal inefficient capital allocation, where firms hold excess cash that could otherwise be invested in profitable projects, thereby dampening returns. This duality suggests that optimal liquidity is not a one-size-fits-all solution but depends on firm-specific factors such as size, operational efficiency, and risk appetite.

Theoretically, these findings contribute to refining financial management frameworks by highlighting the conditional nature of financial imperatives' effects on performance, dependent on firm attributes. Practically, policymakers and firm managers should tailor financial strategies according to firm size and context. For example, while large Kenyan manufacturing firms might optimize capital structure and risk management to boost ROE, smaller firms may need targeted interventions to improve asset and working capital management

to enhance EPS. Moreover, dividend policies should consider the differential impact on shareholders measured by EPS versus broader profitability measures like ROE. By emphasizing the interplay between financial imperatives and firm characteristics, this study offers actionable insights for enhancing firm-level financial health and contributes a more differentiated perspective to ongoing debates about financial management efficacy in emerging markets.

Working capital management and performance of manufacturing firms

The results indicated a positive and significant effect of working capital management on financial performance, regardless of whether performance was measured using return on equity (ROE) or earnings per share (EPS), but with varying strengths. When using ROE, the liquidity ratio had a regression coefficient of 0.4102, with a Z-value of 19.16 and a p-value of 0.000, demonstrating a strong and significant impact on performance. Conversely, when using EPS, the regression coefficient was 0.3028, with a Z-value of 13.71 and a p-value of 0.004, indicating a statistically significant effect but with a lower strength compared to ROE. This suggests that, without the intervening effect of firm characteristics, return on equity is more strongly affected by return on equity than earnings per share. The stronger impact on ROE may be due to the fact that ROE reflected overall profitability relative to shareholder equity, which was more directly influenced by the liquidity and efficient management of working capital, whereas EPS, being on a per-share basis, may be somewhat less sensitive to working capital changes.

4.9.6 Financial risk management and performance of manufacturing firms

When comparing the results of financial risk management on manufacturing firms' performance using return on equity (ROE) and earnings per share (EPS) without the moderating effect of firm characteristics, it is evident that both measures are positively and significantly affected by financial risk management, specifically through the interest coverage ratio. However, the effect appears more pronounced when performance was measured using ROE, as it had a higher regression coefficient of 0.1942 compared to the EPS's coefficient of 0.1317, and a notably stronger Z-value of 8.17 for EPS, compared to 7.11 for ROE. This suggested that the financial risk management, as captured by the interest coverage ratio, has a more substantial and statistically significant impact on ROE than on EPS. The greater effect on ROE could be attributed to its closer link to a firm's profitability and investor returns, making it more sensitive to financial risk management practices, which directly influence earnings generation.

5.3 Conclusion of the study

The conclusion of the study was based on both descriptive and inferential statistics carried out. Conclusions were also based on empirical and theoretical literature.

Working capital management and performance of manufacturing firms

Working capital management was established to have a positive and significant relationship with manufacturing firms. This was supported with a correlation coefficient of 0.4762 with a p value of 0.0054. From the regression analysis, working capital management without and with a moderating effect of firm characteristics had a regression coefficient of 0.4102 with a p value of 0.000 and 0.5723 with a p value of 0.000 respectively. This implied that working capital management had a positive and significant effect on performance of manufacturing firms. Therefore, it was concluded that without and with moderating effect of firm characteristics, working capital management had a positive and significant effect on performance of manufacturing firms in Nairobi security exchange. The outcome of the study showed that firms would apply contingency theory in ascertaining their liquidity for better management.

7 Financial Imperatives and Financial performance of firms measured using Return on equity and Earnings per share

Financial performance of manufacturing firms were measured using return on equity and earnings per share. The study sought to find out on how financial imperatives affects both return on equity and earnings per share. The results from the study findings showed that financial imperatives such as capital structure management, fixed asset management, dividend management, working capital management and financial risk management had a significant effect on both return on equity and earnings per share. It was established that financial imperatives affects return on equity more than earnings per share. Therefore, it was concluded that financial imperatives had a strong significant effect on return on equity than earnings per share.

5.4 Recommendation of the study

4 Working capital management and performance of manufacturing firms

The results from the study showed that working capital management had a positive and significant effect on performance of manufacturing firms in Nairobi stock exchange. Therefore, it was recommended that manufacturing firms listed on the Nairobi Stock Exchange should maintain optimal liquidity ratios by efficiently managing their current assets and liabilities. Firms should regularly monitor their liquidity ratios, such as the current ratio and quick ratio, to ensure they have sufficient short-term assets to cover short-term liabilities. Effective liquidity management helps firms avoid liquidity crises and maintain smooth operations. This recommendation is important because it directly affects the firm's ability to meet its short-term obligations, thereby enhancing financial stability and overall performance. It is important for manufacturing firms that employ the working capital management strategies to balance between profitability of the firm and the firm's liquidity. This is because there is an implicit trade-off between liquidity and profitability.

Therefore, it was also recommended that these firms should implement robust cash flow management practices to ensure adequate liquidity. This can include precise cash flow forecasting, managing receivables and payables efficiently, and maintaining an optimal level of cash reserves. By having a clear view of cash inflows and outflows, firms can avoid cash shortages and make informed decisions about working capital investments. This recommendation is crucial as it helps firms maintain liquidity, reduce the risk of insolvency, and ensure they can capitalize on growth opportunities when they arise. It is important for manufacturing firms to make a preliminary cost-benefit analysis of the various working capital management decisions before committing the firms' resources towards a specific decision. Proper working capital management practices will enable a firm to effectively manage its capital budgeting function. Effective capital management policies will therefore enable firms to carefully evaluate their financing needs whether long term or short term. It was also recommended that firms should utilize financial tools and technologies to improve working capital management and liquidity ratios. Adopting advanced financial management software can help automate and optimize processes like inventory management, accounts receivable, and accounts payable. This technology can provide real-time insights into liquidity positions, enabling proactive adjustments to working capital strategies. This recommendation is vital because it enhances the efficiency and accuracy of liquidity management, supporting better decision-making and contributing to the firm's improved financial performance.

Financial Imperatives and Financial performance of firms measured using Return on equity and Earnings per share

It is recommended that manufacturing firms adopt sound working capital and dividend management policies that support both operational liquidity and shareholder value. Efficient working capital management can lead to improved financial performance by ensuring that funds are available for reinvestment, while strategic dividend management can enhance investor confidence, potentially boosting both return on equity and earnings per share.

Theoretical relevance of the study

It was discovered that working capital management and manufacturing enterprises' performance are positively correlated. These findings support the hypothesis put out by contingency theory, which holds that working capital management is most effective when the firms meets the uncertainties. As a result, only businesses that match their working capital to the current environment are able to operate at their best.

5.5 Conclusion on Policy

The study's findings should be included by the government when creating rules that would help manufacturing companies operate more efficiently and solve industry disparities. The government should pass legislation providing financial assistance to up-and-coming businesses in the sector in order to accomplish this.

On the policy front, this research offers a timely contribution: financial regulators and policymakers in Kenya should promote differentiated financial reporting standards and performance benchmarks based on firm scale and strategy alignment. For example, credit support and debt policies should consider a firm's ability to manage financial risk effectively, not just its profitability on paper. Thus, the contribution of this study lies in

moving beyond prior works that narrowly measured firm performance, offering a multi-dimensional and more context-aware framework for interpreting financial effectiveness in Kenya's manufacturing sector.

REFERENCES

1. Amirapu, Amrit and Arvind Subramanian. 2015. "Manufacturing or Services? An Indian Illustration of a Development Dilemma." Center for Global Development Working Paper 409.
2. Brigham and Houston. (2017). *Fundamentals of Financial Management.*
3. Chauhan and Banerjee. (2018). Financial constraints and optimal working capital–evidence from an emerging market. *International Journal of Managerial Finance*, 37-53.
4. Cliff and Willy. (2014). Macroeconomic fluctuations effects on the financial performance of listed manufacturing firms in Kenya. *The international journal of social sciences*.
5. Cooper and Schindler. (2017). *Social Sciences Research Methods.* London: Mc Grow Hill Publishers.
6. Creswell. (2013). *Research Design: Qualitative,Quantitative and Mixed Methods Approaches.* London: Sage Publications.
7. Eljelly. (2014). Liquidity-Profitability trade off. An empirical investigation in an emwrging market. *International Journal of Commerce Management*.
8. Gerio, P. and Wahome, N. (2020). Effect of Liquidity Management On Financial Performance Of Agricultural Firms Listed In Nairobi Securities. *Strategic Journal of Business and Change Management*, 7(3), 354 – 364.
9. Green.(2012). *Econometric Analysis.* Prentice Hall: Upper Saddle River .
10. Hezekiah.B. O, 2022; Industrialization secretary, Ministry of Industrialization, trade and Enterprises development. High level policy dialogue on fostering productive capacities in Kenya for industrialization for export diversification and inclusive growth.
11. Islam, J.(2012). A review of literature on contingency theory in managerial accounting. *African Journal of Business Management*, 6(15), P. 5159-5164.
12. Jarolava,H, Wagner,M, 2005:The performance of panel unit root and stationarity tests. Published in Italy in 2005.
13. Jogiyanto, Hartono M. (2000). Teori Portofolio dan Analisis Investasi. Edisi Kedua. Yogyakarta: BPFE
14. Jong. (2019). Multicollinearity and Misleading Statistical Results. *Korean Journal of Anesthesiology*.
15. Kartiningsih.D and Wiwiek, M.D,2020. The effect of firm characteristics to profitability of food and beverages companies listed in Indonesia stock exchange. International Journal of Business, Economics and Law, Vol. 22, -1552-2289.
16. Kasozi, J. (2017). The effect of working capital management on profitability: a case of listed manufacturing firms in South Africa. *Investment Management and Financial Innovations*, 14(2-2.
17. Kenton. (2021). *American Institute of Certified Public Accountants* . New York.
18. Kenya National Bureau of Statistics. (2018). *portion of manufacturing in Gross Domestic Product in Kenya.* Nairobi.
19. Kiymaz. H, Samina.H and Ahmed.A.C, 2024;Working capital management and firm performance: A comparative analysis of developed and emerging economies. Borsa Istanbul Review Volume 24, Issue 3, May 2024, Pages 634-642.
20. Knief, U., & Forstmeier, W. (2021). Violating the normality assumption may be the lesser of two evils. *Behavior Research Methods, 53*(6), 2576-2590.
21. Kothari.(2014). *Research methodology (Third ed.).* International Publishers: New Delhi.
22. Lalah.A.A,2022. Effectsof working capital management on financial performance of manufacturing companies listed at the nairobi securities exchange.
23. Letters, 2(4). https://doi.org/10.46557/001c.2414.
24. Louw, Hall and Pradhan. (2022). The relationship between working capital management and profitability: evidence from South African retail and construction firms. Global Business Review. 313-333.
25. Mainul.A.F.M,2012:Can ROE be used to predict portfolio performance? Economics, Management, and Financial Markets Volume 7(2), 2012, pp. 132–148, ISSN 1842.

26. Marenya, O. (2020). *Working Capital Management and Financial Performance of Manufacturing and Allied Category of Firms Listed at The Nairobi Securities Exchange, Kenya.* Nairobi: Repository of Kenyatta University.
27. Mertens and Thiemann. (2018). Market-based but state-led: The role of public development banks in shaping market-based finance in the European Union. Competition & change.184-204.
28. Nekoye, Makokha and Namusonge. (2018). Determinants of Working Capital Management on Financial Performance of Orchards in Kenya: A Case Study of Mount Elgon Orchards.
29. Neville,J, Simsek,O, Jensek.D,2004: Autocorrelation and Relational learning, Challenges and opportunities.
30. Ochieng, Jagongo and Ndede. (2020). Working capital management and financial performance of manufacturing and allied category of firms listed at the Nairobi Securities Exchange, Kenya. *International Journal of Research and Marketing*, 1-21.
31. Ogunmakin, Adebayo and Olaniyan. (2022). Effect of Financial Management Practices on Firm Performance of Selected Manufacturing Companies in Nigeria.
32. Oscar.T.R,2007;:Panel data analysis; Fixed and random effects using stata..
33. Otley, D. (2016). The contingency theory of management accounting and control. *Management Accounting Research*, pp. 45–62.
34. Oudat M.S, Ali B.J.A, Abdelhay.S, Hazaimeh.H.M, Altalay.M.S.R, Marie.A and El-Bannany.M (2024). The effect of financial risks on the performance of Islamic and commercial banks in United Arab Emirates.
35. Pandey,P., D. and Pandey, M., D. (2015). *Research Methodology: Tools & Techniques.* Romania: Bridge Center.
36. Patrick, R. H. (2021). Durbin–wu–hausman specification tests. In *Handbook of financial econometrics, mathematics, statistics, and machine learning* (pp. 1075-1108).
37. Rahman.S, Peshawar, Khurshed. I.k.p,2019.Effect of Working Capital Management on Firm Performance: The Role of Ownership Structure
38. Rath, B., N. and Akram, V. (2021). Popularity of Unit Root Tests: A Review. Asian Economics.
39. Ryan, 2022: ROE: An indicator to measure co's performance.
40. Saxberg, B., O. (1979). A Theory of Performance: A Contingency and Path Analysis Approach. *Journal of Management Science*, 25(3), 231-244.
41. Sekaran and Bougie. (2010). *Research Methods of Business.* Chennai India: John Wiley and Sons Ltd.
42. Septarinia,D., anuhutub,F., Silambi, E., D. and Mallongi,A. (2018). Analysis of the Implementation of Setiyowati, S, W. and Irianto, M., F. (2021). Impact of financing decision on Profitability Dimedient Policy. *Journal of Financial Accounting Research*,, Vol. 6 No.1.
43. Shapiro and Wilk. (1965). An Analysis of Variance Test for Normality. 591-611.
44. Tobin, J. (1955). Liquidity preference as behavior towards risk. *The Review of Economic Studies*, 25, 65-86.
45. United Nations conference on trade and development, trade and development report, 2016.
46. Wilfred, C. (2016). Philosophy, Methodology and Action Research. *Journal of Philosophy of Education, 40*(4), 421-436.
47. World Bank Report. (2018). *Kenya's own commercial banking sector has now started focusing on micro enterprises.* Nairobi.