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Capital Structure Management and Performance of Manufacturing Firms in Kenya

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ABSTRACT:- Capital structure management are critical aspects in all manufacturing firms that play a big role in determining the overall stability and ensuring available funds are effectively used. Despite having implemented pertinent financial imperatives such as capital structure management, the growth of manufacturing sector in Gross domestic product fell to 2.7 percent in 2022 from 7.3 percent the year before according to the Kenya National Bureau of Statistics 2023 Economic Survey. The researches conducted on manufacturing companies have concentrated on the individual effect of the financial factors and not the combined effect. The objective of the study was to establish the effect of capital structure management on performance of manufacturing firms on Nairobi securities exchange. Pecking order theory guided the study. The study's target population was nine listed manufacturing firms in Nairobi Securities Exchange. Correlational research design and multiple regression model were used. Census survey was utilized to study all the nine manufacturing firms. Data processing and analysis was computed through use of STATA. Descriptive statistics such as mean, standard deviation were generated. Inferential statistics comprised of multiple linear regression analysis. Data was presented using tables, charts and graphs. Capital structure management showed a negative correlation coefficient of -0.5312 on firms' performance. Correlation coefficient of capital structure management, was -0.3622. The study results of capital structure management and performance of manufacturing firms indicated an overall R square of 0.4817 with ROE and 0.4574 with EPS. The study is valuable to the government, policymakers and managers in manufacturing firms to adopt to the financial imperatives in order to improve performance.

I. BACKGROUND OF THE STUDY

Manufacturing sector plays a very big role in the economic growth and economic development of any country. It is the foundation of the socioeconomic transformation that provides chemicals, machinery, and equipment for mechanizing agriculture and processing plants in agro-processing to add value to agricultural produce and reduce postharvest losses; it supports the housing sector by producing construction materials; it innovates building designs and construction; and it improves the use of local building materials; it supports the health sector by producing pharmaceuticals, hygiene products, and medical equipment; and it generates direct and indirect employment, including in related services (transport, logistics, financial sector, ICT) (Hezekiah, 2022).

Governments in Europe have supported the growth of manufacturing companies by implementing a number of factors. The factors were to boost firms' financial performance while also enhancing their safety and soundness. There have been a number of financial sector changes implemented, including the level of equity and debts. Reforms to the financial industry were anticipated to increase effectiveness and efficiency (Mertens & Thiemann, 2018).

The manufacturing industry has a regional impact on the economies of many nations. Nigeria's manufacturing sector contributed 8.59% to GDP in the third quarter in 2022. Setting up policies to increase global product manufacturing competition was prioritized. In 2021, the president of the African Development Bank stressed that the continent of Africa has many natural resources, including oil, gas, minerals, metals, agricultural products, forestry products, and the blue economy, which means it has a lot of potential to grow its manufacturing sector. The continent only needs to draw up policies for manufacturing and enhance its infrastructure. He stated that all that was required was for the continent to benefit from the fantastic potential of the free trade area and have an export-driven industrial sector. Most African countries do not have enough capital to exploit the existing resources and maximize profits (Ogunmakin, Adebayo & Olaniyan, 2022).

The majority of manufacturing firms registered on the Nairobi Stock Exchange (NSE) have continued to see a fall in their net profits (Kenya National Bureau of statistics). For example, BOC Kenya PLC saw a fall of 49% from 2016 to 2017, British American Tobacco Kenya PLC saw a decline of 21% from 2016 to 2017, and a decline of 15% from 2015 to 2016, and Carbacid Investment PLC saw a decline of 18.7% from 2014 to 2015 and a decrease of 6.19% from 2016 to 2017. The business had issued a profit warning for 2019. Over the past ten years, Mumias Sugar has kept losing money (Museleku, 2022).

The Kenyan vision for 2030 includes industrialization as a significant element. The success of the industrialization pillar depends on the manufacturing industry. Despite how important the manufacturing sector is, it faces a number of obstacles that make it difficult for it to thrive. The absence of suitable resources is one of the major problems facing manufacturing companies. The accomplishment of business hugely relies on the financial administrators' capability to efficiently supervise the payables, the list of assets and receivables (Ochieng, Jagongo & Ndede, 2020).

Kenya's domestic manufacturing industry is essential to the country's economic growth. It has been seen to increase employment possibilities, encourage the flow of foreign currency, and make a significant contribution to the Gross Domestic Product (GDP). As a result, the government has created policies and stimulus plans aimed at enhancing the sector (Awino, Zachary & Wainaina, 2019).

II. PROBLEM OF THE STUDY

Financial imperatives are crucial financial factors for a firm as they determine the overall stability of the firm. Despite the implementation of the various financial imperatives such as capital structure management, the performance in the manufacturing sector has been on a declining trend. Kenya National Bureau of Statistics 2023 Economic Survey on May 3, 2023 showed that Manufacturing sector's growth contracted to 2.7 percent in 2022 from 7.3 percent the previous year. Many manufacturing companies had negative working capital, unpaid creditors, and a high debt-to-equity capital ratio. Kenya's manufacturing sector has been expanding more slowly than the country's overall economy. The economic survey, 2024 showed that the share of manufacturing sector 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. Manufacturing sector has appeared to have deteriorated in its performance. The researches done by Mutua and Atheru, (2020), Purba and Bimantara, (2020), Marenya, (2020) and Murage and Emba, (2019) on manufacturing firms have concentrated on the individual effect of capital structure management not the combined effect of financial imperatives. Hence to establish the effect of capital structure management on the performance of listed manufacturing firms in Kenya.

Objectives of the study

To assess the effect of capital structure management on performance of manufacturing firms in Kenya.

Hypothesis of the study

H_{01}: There is no significant effect of capital structure management on performance of manufacturing firms.

1.6 Scope of the study

The study focused on Capital structure management and performance of listed manufacturing companies in Kenya. Secondary data was collected from audited annual financial reports of the manufacturing firms in Kenya for ten years from 2013 to 2022 because during this period, devolution and big-four agenda were implemented in Kenya. The study is based on nine listed manufacturing firms in Nairobi securities exchange to collect data.

III. THEORETICAL LITERATURE REVIEW

Pecking Order Theory

This theory was proposed by Myers, (1984). It posits that businesses favor internal funding over external funding. Debt is favored over outside equity, which is only employed as a last resort if the company needs external funding. Companies are cautious about paying dividends and rely on debt financing to boost their stock value.

The pecking order theory has the effect that profitable businesses always prefer internal financing. Companies focus on developing their own capital resources while expanding their asset base, revenue, liquidity, and profitability. They also use fewer external financing sources. The premise behind this theory is that when a firm issues debt, it is communicating to the market that it is confident in its ability to make timely debt payments. A market indicator indicating the company may be overpriced is the issuing of equity, in contrast. Another prediction of the pecking order theory is that businesses will prioritize short-term debt over long-term debt (Fama & French, 2002).

Vanacker and Manigart, (2010) observed that the majority of external financing is debt and that equity issues are tiny, covering only a small share of capital formation. The evidence for publicly traded American companies, notably during the 1980s and 1990s, does not support these essential assertions. Since it frequently outpaces investments, external finance is significantly more important than is typically acknowledged. A substantial portion of external financing is equity financing. The majority of the time, net equity issues outnumber net debt issues. The fact that net equity issuance matches the financing deficit far more closely than net debt issues is particularly notable. Equity analysts project large companies to experience at least adverse selection challenges due to better coverage. Issuing debt is preferred over issuing equity as long as the company has the capacity to service debt.

Companies, where possible, use retained earnings to fund their operations. Debt is employed if the return on investment is insufficient. Firms will only use new equity financing in exceptional circumstances. So, the order of the financial sources used will be internal cash from profits, followed by short-term securities, debt, preferred stock, and finally common stock. The issuance of equity is supposed to be the last alternative source of finance according to the pecking order principle. Due to attractive dividend policies, unpredictably fluctuating profitability, businesses that require external financing will first pick debt, followed by hybrid securities like convertible bonds, and finally equity as a last alternative. In general, the pecking order theory explains why businesses could let cash flows dictate their level of leverage. This shows that firms choose debt financing when faced with shortage of internal resources (Chikashi, 2011).

The option of using internal and external financing is preferred, and a limited amount of external financing through issuing equity is used for reinvestment and fundraising reasons. Pecking order theory predicts that high-growth companies have a debt ratio since they will opt for more debt than equity. This implies that debt capital is preferred to issuing new equity capital in the case of external funding. A firm's choice of capital structure impacts its profitability greatly (Marshall, Mccann, & Mccolgan, 2016).

It is preferred to use both internal and external financing, and for reinvestment and fundraising purposes, a limited fraction of external financing is obtained by issuing equity.

According to the pecking order principle, high-growth businesses will have a debt ratio because they will choose debt over equity more often. This suggests that in the case of external investment, debt capital is preferred to issuing additional stock capital. The capital structure a company chooses has a significant impact on its performance (Setiyowati & Irianto, 2021).

The theory's ability to identify the various factors influencing financing costs is severely constrained. It does not offer a numerical indicator of how information flow influences financing costs. Although the idea appears to be relevant to the paper, it might be difficult for businesses to implement it in every situation. Its theoretical character prevents it from having any practical applicability. It restricts the kinds of financing. New forms of funding are not compatible with the hypothesis. It's a very old notion that hasn't been modified to reflect more recent techniques for financial fundraising.

This theory is pertinent to the research since listed manufacturing enterprises in Kenya typically generate profits from their operations; as a result, a significant portion of retained earnings is used to finance ongoing operations and make new investments. In order to determine whether the choice of capital structure made by listed manufacturing firms influences the firm's financial performance, a thorough understanding of the pecking order theory was necessary.

IV. CONCEPTUAL FRAMEWORK

This section conceptualizes capital structure and performance. Figure 2.1 represents the conceptual framework used for this study.

Conceptual Framework

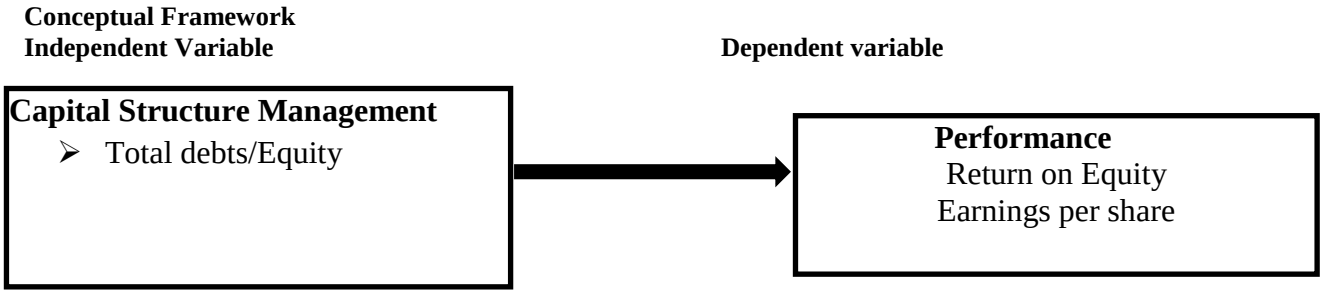

Figure 1 Conceptual framework
Source (Researcher's Conceptualization 2025)

A company's capital structure is the particular proportion of debt and equity it utilizes to finance its operations and expansion. The composition of a firm's capital structure refers to the proportional share of various sources of money. The primary sources are shareholder funds and borrowing from outside entities. As a result, borrowing levels, capital structure, operating leverage, and financial leverage are all indicators of financing decisions. The capital structure is crucial for any corporate organization, regardless of industry or economy. It is typically challenging for businesses to find the optimal debt-equity ratio. (Opoku-Asante, Sharifzadeh, Neubert & Winful, 2022).

In this study capital structure was measured using debt-equity ratio. Higher interest payments and a larger risk for corporate creditors and investors result from a company's financial leverage; as a result, excessive corporate leverage makes financial institutions more exposed to shocks and may damage their ability to repay.

Capital structure decisions entail selecting an appropriate debt-equity combination to achieve optimal capital structure. For greater profitability, a company must use the right mix of capital and equity (Usman, 2019). Achieving a company's ability to define its capital structure is a challenging task. Retained revenues from within the organization and stock or debt from outside the organization is the two main sources of funding for organizations. Retained earnings are the portion of a company's profit that is left over after surpluses have been distributed to stockholders and subsequently reinvested in the operation. Because they do not incur floating charges or escalating financial obligation and risk, retained earnings are a sizable source of internal finance for a business. Retained earnings thereby support a company's potential to grow and increase shareholder wealth. Additionally, businesses can borrow money from a variety of sources, including long- and short-term obligations. While a short-term obligation may be less expensive than a long-term one, it may also carry a larger risk (Mutua & Atheru, 2020).

The ability of the company to meet the needs of its stakeholders is directly tied to the capital structure, one of the financial imperatives in corporate finance. Businesses have the chance to change their cost of capital and, consequently, their market value by changing their capital structure. As a result, the firm management or board of directors of a firm should always work to create an ideal capital structure that would be advantageous to equity owners in particular as well as to other groups including employees, consumers, creditors, and society (Ojili, 2023).

In Bangladesh, it was taken into account by Rahman, Sarker and Uddin, (2019) that a company's financial performance was improved by use of good capital structure. A favorable debt-to-equity ratio can affect the company's financial performance. The most crucial decision a manufacturing company's management can make to increase profits, cut down on capital expenditures, and increase stockholder wealth is the choice of capital structure.

V. EMPIRICAL LITERATURE REVIEW

Mutua and Atheru (2020) evaluated how capital structure management affected the performance of companies listed in Kenya's manufacturing and allied industries on the Nairobi Stock Exchange. The study used a descriptive research methodology, and multiple regressions were used to evaluate the data. The eight companies listed under the manufacturing and related industry at the Nairobi Securities Exchange in Kenya made up the target population where a census technique was used. The study's findings showed that capital structure had a negative and significant impact on the financial performance of companies in Kenya's manufacturing and allied industry. Though the capital structure had a negative effect on performance, with the Modigliani and Miller theorem, capital structure doesn't have any effect on the performance of a firm.

Ogenche, Githui and Omurwa (2018), carried out a study to establish the effect of capital structure management on financial performance of consumer goods firms listed on the NSE. The study employed panel research design. This study targeted 12 firms listed on the Nairobi Securities Exchange. A census of all the 12 firms listed in Nairobi Securities Exchange was used from the year 2012 to 2016. Secondary data extracted from the financial statements was utilized to compute the relevant ratios. The study employed a dynamic panel data regression model and E-views software was used for data analysis. The results showed capital structure had a positive and significant influence on performance of firms. The positive influence on performance must have been due to more equity used than debts in the business. There could have been more profits retained in the business. From the findings, capital structure management is an important element in any firms for the management to embrace in improving its performance. The study was majorly on consumer goods firms and not on manufacturing firms. The study covered a period between 2012 and 2016, which was very short and not recent to give proper picture of performance of the firms. Thus, a study in Kenya that focuses on manufacturing companies at NSE was necessary.

Mohammad et al., (2019), in their study established the effect of capital structure on the financial performance of listed construction firms in malasyia. The study employed longitudinal research design and employed census sampling technique. Data was drawn from the audited annual reports of 41 construction firms listed in the construction sector from the main board of Bursa Malaysia. This study was based on panel data analysis. The study results indicated that there was positive and significant relationship between capital structure and financial performance of listed construction firms. Good performance in the firm depended on higher equity as compared to debts. The study employed longitudinal research design. The research was conducted in Malaysian construction companies. Thus, a study in Kenya that focuses on manufacturing companies in NSE was necessary. The study did not embrace the pecking order theory of a firm considering to retain more earnings.

Singh and Bagga (2019), made a study to establish the effect of capital structure on profitability of companies listed in national stock market of India. The study adopted longitudinal research design and census sampling technique was applied. The study targeted 50 companies which were listed in national stock exchange of India. Data was collected from audited financial statements of the firms. Stata aided in data analysis where

descriptive and inferential statistics were obtained. The loans capture high interest charges that must have reduced the profits. The study employed longitudinal research design. There was need to do a research using other designs like correlational design. Thus, a study in Kenya that focuses on manufacturing companies in NSE Kenya was required. The researchers were to understand that though capital structure had a negative effect on performance with the Modigliani and Miller theorem, it doesn't have any effect on the worthiness of the firm.
Ajibola and Qudus,2015, looked at how capital structure affected the financial results of Nigerian industrial companies that were listed between 2005 and 2014. The effect of capital structure on the financial performance of Nigerian manufacturing companies that were listed was examined using panel methods. Return on equity (ROE) and the short-term debt ratio had a positive statistically insignificant relationship, while the long-term debt ratio, total debt ratio, and ROE had a positive statistically significant relationship, according to the panel ordinary least square results. Additionally, there was a negligible negative correlation between ROA and any of the capital structure proxies, indicating that ROE is a more accurate indicator of performance. According to the study's findings, capital structure improves businesses' financial success. This study is against the pecking order theory that states that a firm will prefer internal financing to increase its equity other than increasing its debts. The study was done from Nigerian manufacturing firms that had different policies.

The research study by Shedrack and Abdu, 2022 investigated the association between capital structure and stock performance of the companies that traded the best-performing stocks on the Nigerian stock market in 2021. The researcher selected eight firms at random from a population of ten. A four-year panel data collecting period (2018–2021) was employed in the study. The study employed SPSS's least squares dummy variables regression and research statistics created in Excel for evaluating hypotheses. The results indicated that company capital structure and stock performance were positively correlated in a statistically meaningful way. Larger samples of the top-performing stocks spanning two or more years should be used, according to the study. The study varied in terms of research methodology and was done from firms in Nigeria.

Boshnak, 2023 investigated how capital structure affects the performance of companies listed on the Saudi Stock Exchange. A panel 70 Saudi non-financial listed companies from 2016 to 2020 was used in the study. To address any autocorrelation, heteroscedasticity, and endogeneity concerns, models were estimated using the generalized method of moments in order to facilitate hypothesis testing. The findings showed that while long-term debt, total debt, and debt-to-equity ratios had an effect on the firm's financial performance (return on equity) and market performance, short-term debt, long-term debt, and total debt all had a significant negative impact on the firm's operational performance (return on assets). The findings also indicated that while asset tangibility and liquidity have a less clear effect on business performance, improvements in sales growth, the level of insider ownership, and firm size and age generally have a favorable influence. The study's conclusions were restricted to Saudi non-financial listed companies from 2016 to 2020, although the main findings could apply to other emerging nations. Future studies should look at how capital structure affects company performance as well as other capital structure and performance metrics.

Research Philosophy

This study was guided by positivism where the phenomena being observed lead to the construction of dependable data. Researchers who use quantitative techniques like counting and quantifying are known as positivists. Positivism makes it possible to use statistical methods for testing hypotheses to assess research data gathered using quantitative research methods (Creswell, 2013).

Research design

The study applied correlational research design and multiple panel data regression model were used. The correlational research method describes in quantitative terms the degree to which variables are related. It involves collecting data in order to determine whether and to what extent a relationship exists between two or more quantitative variables. Correlational studies are used to explore relationships between two or more variables (Devi, Lepcha, & Basnet, 2022).

Target Population

The population for this study was nine manufacturing firms listed at the Nairobi Stock Exchange as at 31st December 2022 under manufacturing sector. Its justification is that it is updated every day after the markets have closed and by looking at it, a person can understand the adjustments capital structure by checking the individual stock prices.

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

The census method was employed to gather information as it guarantees the collection of precise data from the whole population, encompasses a broad spectrum of a company's demographic details, and characteristics. Census was additionally more appropriate for a limited target population of under 50 (Cooper & Schindler, 2017). Due to the small number of manufacturing firms, which is less than 50, the financial performance of Kenya's manufacturing sector was analyzed using data from all available firms.

Data Collection Instruments

The researcher collected secondary data from target manufacturing firms from secondary sources comprising mainly of financial statements published and covering a period from 2013 to 2022. From the financial statements of the firm, the researcher processed the ratios relating to study variable. Financial statements used in this study were sourced from listed manufacturing firm's website and capital market authority website. The study used a data collection sheet.

Data Collection Procedure

Secondary data was obtained from the Nairobi Securities website, which provided the published audited annual financial report. The researcher utilized a panel sheet to gather the information. The panel data encompassed both cross-section and time series elements. The study spanned a decade from 2013 to 2022, with the cross-sectional data obtained from nine manufacturing companies listed on the NSE.

Data Analysis and Presentation

Data was exported from an excel sheet to STATA for analysis. Both descriptive and inferential statistics was analyzed. 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. Descriptive statistics provide a summary of the data set, giving an overall picture of the central tendency, variability, and range of values for each variable under consideration. The mean represented the average value, offering insights into the typical performance levels. The standard deviation indicated the degree of variation or dispersion in the data, highlighting the consistency or volatility of the financial metrics. The minimum and maximum values revealed the range within which the data points lie, indicating the extremes 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;

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

$EPS_{it} = \beta_0 + \beta_1 CSM_{it} + \varepsilon_{1it}$ ……...(2)

Where;

ROE –Return on Equity=Net Income/ Shareholders Equity

EPS represents Earnings per share

β_0 – Constant in the model without firm size.

β_1– Regression coefficient

CSM –Capital Structure 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 performed to evaluate if the data adhered to a normal distribution, which is a fundamental assumption in regression analysis. Normality guarantees that parametric tests, like linear regression, produce accurate and effective estimates. The Shapiro-Wilk test was employed to assess normality because of its dependability, especially with smaller datasets (Shapiro and Wilk, 1965). The null hypothesis (H_0) for the normality test stated that the data follows a normal distribution. If the p-value was below 0.05, the null hypothesis was dismissed, suggesting that the data was not normally distributed. Administering this test was essential since non-normality can influence the accuracy of the regression model and affect hypothesis testing along with confidence intervals. The outcomes of a normality test show if the sample data originated from a population that was normally distributed. It is usually conducted to verify that the data from the research exhibited a normal distribution.

Residual Normality

Residual normality indicates if the residuals (errors) from the regression model follow a normal distribution. In this research, it was essential to evaluate residual normality since deviations from normality in residuals may result in skewed estimates and flawed conclusions regarding the impact of capital structure management on performance (Knief & Forstmeier, 2021). In this research, the Shapiro-Wilk test was employed to assess normality. The test was selected to assess residual normality because of its sensitivity to small samples and its capacity to identify departures from normality. The null hypothesis for this analysis is that the residuals follow a normal distribution. The criteria for rejection remain unchanged: a p-value lower than 0.05 signifies non-normal residuals (Knief & Forstmeier, 2021).

Multicollinearity Test

The research carried out a multicollinearity assessment to identify if the model's independent variables exhibited high correlations. Severe multicollinearity complicates the identification of the separate impacts of the independent variables and increases the variance of coefficient estimates. The Variance Inflation Factor (VIF) was utilized for this analysis, where values exceeding 10 suggest considerable multicollinearity (Jong, 2019). VIF was selected because it offers a straightforward assessment of how much the variance of a regression coefficient is increased because of multicollinearity. This examination is crucial to confirm that the model's independent variables offer unique and trustworthy inputs in clarifying the dependent variable. The presence of this phenomenon could significantly limit the study's conclusions and negatively impact the findings. Multicollinearity is used to assess how effectively one independent variable can be expressed through the other independent variables.

Stationarity Test

A stationarity test was performed to verify that the time series data (if utilized) did not show trends or variations over time, since non-stationary data might result in misleading relationships within regression models. The Levin-Lin-Chu (LLC) test was used for this aim, examining unit roots that signify non-stationarity. The LLC test was selected due to its suitability for panel data and its ability to efficiently manage stationarity testing across different firms and time frames (Jarolava & Wagner, 2005). The null hypothesis (H_0) proposed that the data possessed a unit root (non-stationary), while a p-value below 0.05 indicated that the data was stationary. This assessment was essential to avoid inaccurate statistical associations in time series analysis (Sekaran & Bougie, 2010). Evaluating stationarity is an essential initial task in time-series analysis that assists in directing more relevant analyses subsequently.

Test for Autocorrelation

The research additionally conducted an autocorrelation test to determine if the residuals were related over time, since autocorrelation breaches the assumption of independent errors and may result in skewed estimates (Neville, Simsek & Jensen, 2004). The Wooldridge test was conducted, with the null hypothesis (H_0) asserting that there was no autocorrelation present in the residuals. The Wooldridge test was selected as it is tailored for panel data and is commonly recognized for identifying autocorrelation in longitudinal datasets. A p-value less than 0.05 suggested the existence of autocorrelation. This assessment confirmed the temporal independence of the residuals, enhancing the precision of the model's predictions (Kenton, 2021). In modeling and forecasting future values of a time series, autocorrelation is essential for identifying patterns and connections within the data.

Hausman Test

The Hausman Test identifies endogenous predictors in a regression model. Endogenous variables possess values that are influenced by other variables within the system. Endogeneity arises when a predictor variable (x) in a regression model shows correlation with the error term (e) in that model (Ait-Sahalia, & Xiu, 2019).

The Hausman test can help distinguish between the fixed effects model and the random effects model in panel data analysis. When selecting a model for panel data, it is important to take into account the exogeneity of the independent variables alongside their particular components. A random effects model, known as a variance components model, is a statistical approach in which the parameters of the model are treated as random variables. Fixed-effects models represent a type of statistical models where the values of independent variables are considered to be constant (Patrick, 2021). Identifying endogeneity in the explanatory variables is essential to determine whether the fixed or random effects model is more suitable. The random effects model offers the most precise linear, unbiased estimates when utilized appropriately. They are unbiased, efficient, and consistent. The fixed effects model is preferred to the random effects model if a correlation exists between the error term of the random effects model and the independent variables, as this would result in inconsistent estimates. If any factors are omitted that the fixed effect model can handle, the individual-specific component $\boldsymbol{\alpha}$ might correlate with the independent variables in the random effects model. The precision of the Hausman test is a significant concern in the analysis of panel data. The probability value of a random cross-section is the essential aspect to consider in the Hausman Test (Borensteina et al., 2010). Use fixed effects whenever it's evident that the unique traits of each entity or group influence the regressors. Random effects are employed when there is justification to think that individual traits do not influence 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 occurs when the error term's variance differs across observations. It generated p-values that are less than anticipated and may distort and weaken the dependability of the regression coefficient (Jong, 2019). The null hypothesis suggests that the model's residues do not exhibit heteroscedasticity. The Breusch Pagan test was conducted to assess the presence of heteroscedasticity. The Breusch-Pagan test was selected as it is a well-known and dependable technique for identifying heteroscedasticity in regression models. If the calculated probability of the chi-square is under 0.05, the residues are heteroscedastic, while they are homoscedastic if the assessed probability exceeds 0.05. Ensuring that the residuals maintain a constant variance is crucial when analyzing the regression results. Heteroskedasticity occurs when there is an unequal variance observed in the residuals. This test was employed in the study to determine if there is variability in the error term among observations. Heteroscedasticity can arise from outliers in the data set, collecting information at different scales, incorrect model specification, or the use of unsuitable transformation methods for the model's representation. All the situations mentioned previously can impact the results of an effective solution. Consequently, the presence of heteroskedasticity in the model breaches the ordinary least squares (OLS) regression assumption and is likely to yield skewed results.

VI. DATA ANALYSIS, RESULTS AND DISCUSSION

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 1.1-Shapiro Wilk Test for Normality

Variable	Obs	W	V	Z	Prob>z
CSM	90	0.9789	1.590	1.022	0.1532
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 were carried out using mean, standard deviation, minimum, and maximum values to examine the study variables throughout a decade from 2013 to 2022. Table 4.2 presented the outcomes of descriptive statistics..

Table 4.2-Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CSM	90	0.2454	0.1379	0.0212	0.54757
ROE	90	0.4219	0.2653	-0.5473	0.95198
EPS	90	5.1593	1.981	-4.43	28.92

Source: Study data, 2024

The financial performance descriptive statistics, assessed through return on equity (ROE), indicated a mean of 0.4219, a standard deviation of 0.2653, a minimum of -0.5474, and a maximum of 0.95198, derived from 90 observations. The average ROE of 42.19% showed that, typically, the manufacturing companies in the research produced a notable return on equity. The standard deviation of 26.53% indicated a moderate variation in financial performance among the companies. The lowest ROE of -54.74% indicated that certain companies faced losses, potentially stemming from factors like operational inefficiencies, substantial financial leverage, or adverse market conditions. Conversely, the peak ROE of 95.198% suggested that certain companies attained remarkable profitability, probably due to efficient management strategies, competitive edges, or advantageous economic circumstances. This broad spectrum of ROE figures highlighted the varying financial stability and performance results found in the manufacturing industry. The variability emphasizes the need to investigate particular financial priorities, including capital structure oversight, dividend policies, asset supervision, and risk management techniques, to gauge their influence on company performance and discover methods to boost profitability and shareholder worth.

The descriptive statistics for financial performance, assessed through Earnings Per Share (EPS), revealed a mean of 5.1593, signifying that, on average, the manufacturing companies listed on the Nairobi Securities Exchange generated about 5.16 shillings per share in the studied period. A standard deviation of 1.981 indicates a moderate degree of variability in EPS among the firms, implying that certain firms achieved notably superior performance. The lowest value of -4.43 shows that certain companies recorded negative earnings, signaling a loss for them, whereas the highest value of 28.92 indicates that other companies attained substantial earnings per share, demonstrating strong profitability.

The descriptive statistics for capital structure management, measured using the debt-equity ratio, showed a mean of 0.2454, a standard deviation of 0.1379, a minimum value of 0.0212, and a maximum value of 0.54757, based on 90 observations. The mean debt-equity ratio of 0.2454 suggested that, on average, manufacturing firms in the study employ a conservative approach to leveraging, relying more on equity than debt for their financing needs. This low average ratio indicated a relatively lower financial risk and a stronger equity base, which can provide greater financial stability and flexibility. However, the standard deviation of 0.1379 indicated fair variability in the capital structures among these firms. The minimum value of 0.0212 represented firms with minimal debt like BAT,2019, highlighting an extremely conservative financial strategy. In contrast, the maximum value of 0.54757 reflects firms with a high level of debt relative to equity like B.O.C Kenya ltd, indicating a more aggressive approach to leveraging. This variability in debt-equity ratios pointed to diverse financial strategies and risk appetites within the manufacturing sector. Understanding these patterns is crucial for analyzing how different capital structure management practices affects the financial performance of manufacturing firms, potentially affecting their profitability, risk profile, and overall financial health. The results indicated that managers in firms were in line with pecking order theory by prioritizing use of funds generated internally and have less utilization of debts as last resort. Firms used fewer debts, which was an indication that most of the manufacturing firms avoid high risks of incurring high interests on loans. They value internal financing and by issue of shares to interested investors. The results were in agreement with the findings of Mutua & Atheru,2020 and Singh & Bagga, 2019 only with the difference in their research methodologies.

Inferential Statistics

The inferential statistics comprise of correlation analysis, diagnostic tests, and the Hausman test for fixed and random effects.

Correlation Analysis

The research performed correlation analysis to determine the strength and direction of the relationships between capital structure management and the performance of manufacturing companies. The study evaluated the impact of capital structure management on firm performance using Pearson product moment correlation at a 95% confidence interval. Pearson correlation coefficients were used to measure these relationships, showing if enhanced firm performance results were linked to advancements in financial priorities. Values of the correlation coefficient vary between +1 and -1. Positive correlations would indicate that the successful handling of these financial necessities positively affected performance. The findings were presented in Table 4.3.

Table 4.3-Correlation Analysis

Variable	ROE	EPS	CSM
ROE	1.000	0.2721	
		0.001	
EPS	0.2721 0.001	1.000	
CSM	-0.5312	-0.3622	1.000
	0.0001	0.0004	

Source: Study data, 2024

From the results, the correlation coefficient between capital structure management and financial performance (ROE) was -0.5312, with a p-value of 0.0001<0.05. This showed that there was a negative and statistically significant correlation between capital structure management and financial performance. This suggested that higher levels of debt relative to equity were associated with lower financial performance. This finding implied that manufacturing firms with higher leverage may face increased financial risk and interest obligations, which could adversely affect profitability and return on equity. It highlighted the importance of maintaining an optimal capital structure to enhance financial performance. There is a negative correlation of -0.5312 between capital structure management and manufacturing business performance. This indicates that a decrease in the financial performance of a company may be linked to an increase in debt or equity in the capital structure. A significant negative correlation would imply that businesses are not funding in the preferred order of the pecking order, which might result in a mismatch between financing costs and investment possibilities and have a detrimental effect on performance. The Modigliani-Miller theorem contends that, in the absence of taxes, a company's capital structure has no bearing on its worth and that, as financial leverage rises, so does the weighted average cost of capital, or WACC, and equity cost. Based on the correlation analysis, several critical insights emerge regarding the financial imperatives influencing the performance of manufacturing firms in Kenya. Capital structure management (CSM) had a significant negative effect on financial performance, with a correlation coefficient of -0.5312 and p-value of 0.0001, indicating that higher leverage is detrimental to ROE. While studies such as those by Ogenche et al. (2018) and Ajibola et al. (2015) argued that increased debt boosts returns, this study contradicts their conclusions, especially within the Kenyan manufacturing context where firms may face higher interest burdens and greater financial distress. Unlike prior research that may have overlooked contextual financial constraints such as access to credit, inflationary pressures, or investor confidence in emerging economies, the study incorporates a grounded understanding of the Kenyan industrial environment. The findings align more closely with pecking order theory, which favors internal financing over external borrowing, and challenge the universal applicability of the Modigliani-Miller theorem by recognizing the tax and market imperfections present in developing economies. Thus, the research not only fills the contextual gap in literature but also adds depth by revealing that high debt can depress overall profitability, particularly for firms with constrained cash flows. Clement and Olufemi, (2021) and Boshnak, (2023) in their studies had similar findings with this study although they differed in their methodology and countries that had different laws and regulations concerning the particular sector.

The correlation coefficient between earnings per share (EPS) and capital structure management was -0.3622 with a p-value of 0.0004, indicating a moderate negative relationship. In the framework of pecking order theory in manufacturing organizations, a somewhat adverse link is shown by the negative correlation coefficient of -0.3622 between capital structure management and performance. This suggests that performance tends to decline when capital structure management techniques are applied, and vice versa. According to the pecking order idea, companies favor internal funding first, followed by debt and equity, which may have an impact on performance. This result suggested that as capital structure management improves, EPS tends to decrease. According to Mutua and Atheru (2020), firms with a high debt load in their capital structure tend to experience reduced profitability due to high interest payments. This finding aligns with the results, indicating that manufacturing firms with high debt relative to equity may face lower EPS. The negative correlation suggested

that firms should focus on an optimal capital structure that balances debt and equity to avoid diminishing returns and enhance profitability.

Diagnostic Test Results

When analyzing panel regression, one of the requirements is to test whether the model fits all the diagnostic tests under the assumption of linear regression. Five diagnostic tests were conducted to determine the residuals normality, multicollinearity, heteroscedasticity, autocorrelation and stationarity.

Test of normality of residuals

Tests for normality of residuals are consistently performed to confirm that the residuals follow a normal distribution, which is essential for validating the model's fit, stability, and reliability in the research. The Shapiro-Wilk Test was utilized. The null hypothesis of the Shapiro-Wilk test asserts that the residuals follow a normal distribution. If the data does not follow a normal distribution, it may result in unreliable and biased outcomes that impact the study's conclusions. The outcomes of the Wilk test indicate that the W-values equal 1, while the V-values and Z-values are less than the Z-critical value of 1.96, with probability values exceeding 0.05, suggesting a normal distribution of residuals. The findings were shown 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 Shapiro-Wilk Test results for the residuals in Table 4.4 indicated 90 observations, a W statistic of 0.98611, a V statistic of 0.891, a Z statistic of 0.217, and a p-value of 0.31061. These outcomes suggested that the residuals followed a normal distribution, since the W value was nearly 1, the Z value was markedly less than the Z-critical value of 1.96, and the p-value exceeded 0.05. Consequently, the null hypothesis, which asserts that the residuals follow a normal distribution, was not dismissed. This showed that the normality assumptions apply to the residuals, implying that the model's fit, consistency, and reliability were sufficient for examining the impact of fixed asset management on the performance of manufacturing companies.

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
CSM	1.07	0.9324

Source: Study data, 2024

The findings in Table 4.5 indicated that capital structure management had VIF values of 1.07. Given that multicollinearity is deemed present when the VIF exceeds 10 and absent when it falls below 10, these results suggested that multicollinearity was not present in the research. As a result, the null hypothesis indicating that there was no multicollinearity among the independent variable was not dismissed. The lack of multicollinearity indicated that the independent variables had low correlation, thereby confirming the reliability and validity of the regression coefficient. Concerning multicollinearity, the very low VIF values for all variables indicate that the predictors function independently in affecting firm performance. This opposes previous assertions, including those made by Otieno (2017), who stated that multicollinearity is a unavoidable problem in financial models that incorporate closely linked constructs. Nonetheless, the lack of multicollinearity in this research enabled accurate interpretation of each effect of capital structure management, a clarity that earlier studies might have jeopardized because of unresolved correlations among variables.

Test of Autocorrelation

Autocorrelation represents the degree of similarity between a given time series and a lagged version of itself over successive time intervals. Autocorrelation measures the relationship between a variable's current value and its past values. Autocorrelation occurs when the error terms in the regression models correlate over time series. Test of autocorrelation ensured the R^2 was not overestimated to indicate a better fit than its true value (Kenton, 2021). The study used Wooldridge test to determine whether there was autocorrelation. The panel data have no serial association, according to the null hypothesis. The null hypothesis is not rejected if there is no serial autocorrelation in the panel data and the p-values of the Wooldridge test are greater than the 0.05 level of significance. This test would be used in the study in testing the panel data to find whether it occurs when the error term in the regression model correlate over time series. The results were presented 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 results in Table 4.6 showed that the Wooldridge test for autocorrelation resulted in an F value of 0.06 and a p-value of 0.5128. The null hypothesis for the Wooldridge test indicated that there was no first-order autocorrelation in the residuals. Given that 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 autocorrelation in the residuals. The absence of autocorrelation implied that the residuals were independent of each other, ensuring the reliability and validity of the regression model. This result reinforced the robustness of the study's findings, confirming that the estimates of the effect of financial imperatives on the performance of manufacturing firms were not biased by autocorrelation issues.

Test for heteroscedasticity

This occurs when the error term's variance changes across different observations. It generates p-values that are less than expected, potentially distorting and compromising the dependability of the regression coefficient (Jong, 2019). The null hypothesis indicated that the model's residuals were not heteroscedastic. The Breusch Pagan test was utilized to assess the presence of heteroscedasticity. If the calculated probability of the chi-square is below 0.05, the residuals are heteroscedastic; if the computed probability exceeds 0.05, they are homoscedastic. When analyzing the regression results, it is crucial to ensure that the residuals exhibit a constant variance. Heteroscedasticity exists when an unequal variance is observed in the residuals. This test was employed in the study to determine if there was variability in the error term among observations. The results of the Breusch-Pagan test, corroborated by scatter plot analyses, indicated no considerable evidence of heteroscedasticity in the regression model, as p-values (0.2917 for ROE and 0.2525 for the independent variable) were above the 0.05 significance level. This implies that the residuals' variance remains consistent throughout the observations, thereby guaranteeing unbiased and efficient regression coefficients. In contrast to previous research on manufacturing companies in Kenya that either ignored heteroscedasticity diagnostics or utilized less stringent techniques like informal graphical evaluations, this study employs a more statistically robust and confirmatory methodology by incorporating both the Breusch-Pagan test and visual verification. This dual methodological approach enhances earlier studies by bolstering the model's internal validity. Furthermore, the lack of heteroscedasticity enables a more reliable understanding of how capital structure affects companies of different sizes and operational scales, a factor frequently overlooked in generalized or industry-neutral research. The findings were presented 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 findings in Table 4.7 indicated that the Breusch-Pagan test for heteroscedasticity, with financial performance as the dependent variable measured by Return on Equity (ROE), produced a chi-squared value of 11.45 and a p-value of 0.2917. The null hypothesis of the Breusch-Pagan test suggested homoscedasticity,

indicating that the variance of the residuals remained constant. Because the p-value exceeded the usual significance threshold of 0.05, the null hypothesis remained accepted. This suggested that there was no substantial proof of heteroscedasticity in the residuals. The lack of heteroscedasticity indicated that the error variance remained constant across observations, guaranteeing the reliability and consistency of the regression coefficients. This outcome affirmed the study's findings' reliability, verifying that the assessments of how financial imperatives impact the performance of manufacturing companies were unaffected by heteroscedasticity concerns.

Heteroscedasticity for independent variables capital structure 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 findings in Table 4.8 indicated that the Breusch-Pagan test for heteroscedasticity, conducted on the independent variable capital structure management, yielded a chi-squared value of 3.415 and a p-value of 0.2525. The null hypothesis for the Breusch-Pagan test suggested that homoscedasticity existed, implying that the variance of the residuals remained constant. Because the p-value exceeded the typical significance threshold of 0.05, the null hypothesis remained accepted. This suggested that there was no substantial evidence of heteroscedasticity in the residuals linked to the independent variables. The lack of heteroscedasticity indicated that the error variance remained constant across observations, guaranteeing the dependability and uniformity of the regression coefficients. This outcome confirmed the reliability of the study's conclusions, verifying that heteroscedasticity problems did not skew the estimates of the influence of financial imperatives on the performance of manufacturing companies.

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
CSM	90	-7.5736	-4.0602	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

The results in Table 4.9 above showed Levin Lin Chu stationarity test results of the study. The p-values of capital structure management, return on equity and Earnings per share were all less than 0.05 level of significance indicating that we reject the null hypothesis and conclude that the panel did not contain a unit root.

The results of the Levin-Lin-Chu (LLC) test provided strong evidence that key variable in the study capital structure management and financial performance measures (ROE and EPS) were stationary at level, as indicated by p-values well below the 0.05 threshold. This finding rejects the null hypothesis of unit root and confirms that the data series fluctuate around a constant mean over time, which validates the use of panel regression without differencing. Unlike previous studies which either assumed stationarity or used less rigorous unit root tests like the Augmented Dickey-Fuller (ADF) test in isolation, this study applied the LLC test under the panel framework, ensuring more robust and reliable results suitable for multi-firm time series data. This is particularly important in the Kenyan manufacturing context, where firm-level data tends to exhibit volatility due to shifting economic and policy environments. The stationarity of the variables strengthens the internal consistency of the model and ensures that relationships identified between capital structure management and firm performance are not spurious.

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, it is crucial to choose between a random effects model and a fixed effects model. Hausman tests are commonly employed to distinguish between fixed and random effects models. The null hypothesis in Hausman tests states that the random effects model is suitable for the analysis. The outcomes of the Hausman specification test without an intervening variable were presented in Table 4.10.

Table 4.10-Hausman tests results

Variable	(b) Fixed	(B) Random	
CSM	-.4635	-.2734	
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

Based on the results of the Hausman test shown in Table 4.10, the chi2 was not statistically significant, presenting a P-value of 0.3404 at the 5% significance level. The research determined that the random effect model was suitable since it could not dismiss the null hypothesis. To develop a regression model assessing the influence of capital structure management on the performance of manufacturing firms in Kenya, the research utilized 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 is used to determine whether a fixed effects model or a random effects model is more appropriate for a particular dataset in panel data analysis. It helps in selecting between the two models by testing if there are significant differences in the coefficients estimated by both models. The null hypothesis of the Hausman test is that the random effects model is consistent and efficient, meaning that there is no significant difference between the estimates of the fixed and random effects models. The results are shown in Table 4.12.

Table 4.12-Hausman test

Variable	(b) Fixed	(B) Random	
CSM	-.3651	-.2143	
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 capital structure management on performance (Return on Equity) of manufacturing firms

A panel regression analysis was carried out to examine the relationship between capital structure 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
Con	0.1012	0.0165	6.13	0.000
R-sq: **Within = 0.4817** **Between =0.5216** **Overall =0.4817**		**Wald chi^2(3) =49.16** **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 + 0.2734CSMit ……...(1)

ROE represents return on Equity

CSM $_{represents}$ capital structure management

The constant 0.1012 from the regression model (1) indicated that the financial performance measured in terms of ROE of manufacturing firms would be at 10.12%.

From the results it was established that the overall study model was statistically significant. This was evidenced with Prob > chi2 of 0.0000 that was smaller than a significance level of 0.05. The results showed an overall R square of 0.4817. This suggested that 48.17% of the variation in manufacturing firms' financial performance was explained by random effect model which included capital structure management. According to Modern Portfolio Theory (MPT), a manufacturing firm's performance of 48.17% indicates that, although it is producing a return, it is not very strong. MPT places a strong emphasis on risk-return trade-offs and diversity; a 48.17% performance might mean the company is not allocating capital as effectively as it could. Other factors not included in the regression model accounted for 51.83% of the variation in manufacturing firms' performance. Therefore, the model explained only 48.17% of variation in financial performance of manufacturing firms. The capital structure management may not have achieved high returns due to poor application of these factors by the firms.

The study's finding that financial imperatives explain 48.17% of the variation in Return on Equity (ROE) among manufacturing firms in Kenya is both theoretically grounded and practically revealing. From a theoretical standpoint, this result aligns with Modern Portfolio Theory, which encourages firms to allocate resources toward strategies that maximize returns while minimizing risk. Notably, the significant influence of working capital management and fixed asset management reinforces the argument that efficient utilization of short-term assets and physical resources are critical levers of profitability. However, the relatively modest R-square also suggests that while financial imperatives play an important role, their impact may be constrained by either suboptimal implementation or by contextual factors—such as market volatility, firm size, and managerial competencies—which are not captured in the model. For instance, although capital structure is theoretically expected to enhance performance through tax shields and leverage benefits, my findings show a negative effect, echoing critiques that, in emerging economies like Kenya, over-reliance on debt increases financial fragility rather than boosting returns. This challenges Western-centric assumptions in the capital structure-performance debate and brings new, context-specific insights into the discourse.

The objective of the study was to establish the effect of capital structure management on the performance of manufacturing firms. This objective was based on the null hypothesis that capital structure management has no significant effect on the performance of manufacturing firms. From Table 4.14, debt equity ratio had a regression coefficient of -0.2734 with a p value of 0.000<0.05 and Z-statistic of -2.15 which was smaller than Z-score critical of -1.96. This implied that debt equity ratio had a negative and significant effect on performance of manufacturing firms. Therefore, the study rejected the null hypothesis that capital structure management had no significant effect on the performance of manufacturing firms. These findings implied that a percentage increase in debt equity ratio would lead to a subsequent decrease in return on equity by 27.34%. These results showed that increase in debt equity ratio would decrease the return on equity of manufacturing firms. According to a capital structure theory called the Pecking Order Theory, businesses prefer to finance their operations and investments internally first, then through debt, and as a last option, through equity. The debt-equity ratio's negative regression coefficient of -0.2734 with respect to pecking order theory in manufacturing businesses indicates that the financing deficit (or the amount of additional debt required) falls as the debt-equity ratio rises. This study contradicts the pecking order theory's predictions, which state that when a company has a financial gap, it should prefer debt financing above equity. The study revealed that capital structure management significantly affects the performance of manufacturing firms in Kenya. However, this finding contrasts with the Modigliani and Miller irrelevance theory, which posits that the structure of capital does not influence firm performance under certain conditions. The deviation of this study from prior research, such as Singh & Bagga

(2019), lies not just in the Kenyan context, but in its integration of actual firm-specific data over a ten-year period and the inclusion of firm size as a moderating factor an element largely overlooked in prior studies. The implication to policy is that regulators and financial advisors should consider tailoring financing advice to promote a more balanced debt-equity approach, encouraging manageable leverage levels that sustain firm growth while preserving flexibility

The effects of capital structure management on performance (Earnings per Share) of manufacturing firms

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

Table 4.16-Random effects model results

Variable	Coef.	Std. Err.	Z	P>/z/
CSM	-0.2143	0.0629	-3.41	0.003
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- 0.2143CSMit ……...(3)
EPS represents Earnings per share

CSM represents capital structure management

The results in Table 4.16 showed a constant of 3.2139. The Constance is significant at 95% interval level since a p value of 0.001<0.05 and Z-statistic of 9.31 which was more than Z-score critical of 1.96. This implied that when manufacturing firms have not adopted capital structure management, their financial performance measured using earnings per share stands at 3.2139 units.

From the results it was also established that the overall study model was statistically significant. This was evidenced with Prob > chi2 of 0.0000 that was smaller than a significance level of 0.05. The results showed an overall R square of 0.4574. This suggested that 45.74% of the variation in manufacturing firms' financial performance measured using earnings per share was explained by random effect model which included capital structure management. Other factors not included in the regression model accounted for 54.26% of the variation in manufacturing firms' performance. Therefore, the model explained only 45.74% of variation in financial performance of manufacturing firms. The financial imperatives may not have achieved high returns due to poor application of these factors by the firms. The regression results in Table 4.16 offer critical insights into how financial imperatives influence the financial performance of manufacturing firms in Kenya, specifically using earnings per share (EPS) as the performance metric. The constant value of 3.2139, which is statistically significant ($p = 0.001 < 0.05$), indicates that even in the absence of deliberate financial strategies, manufacturing firms are able to generate a baseline level of performance. However, the fact that the random effects model explains only 45.74% of the variation in EPS suggests that financial imperatives namely capital structure management, though impactful, are not the sole determinants of performance. This leads me to argue that the limited explanatory power could be attributed not only to poor implementation of these imperatives but also to the exclusion of firm-specific contextual factors such as size, age, ownership, and managerial capability, which I later addressed in my analysis through the incorporation of firm characteristics as intervening variables.

What sets my study apart from prior works is the depth of contextualization and the holistic interrogation of financial imperatives in a developing economy like Kenya. For example, while traditional finance literature often presents capital structure as a critical performance lever, my findings show that it had a negative and statistically significant impact on performance. This deviates from Modigliani and Miller's (1958) foundational theory, which assumes perfect markets and suggests capital structure irrelevance, or even later tax-benefit theories that associate debt with enhanced value. The findings of this study instead resonate with more recent empirical studies in African contexts (e.g., Abor, 2005) that caution against high leverage in unstable economic settings. Unlike most studies that generalize conclusions, this research positions capital structure within the practical constraints faced by Kenyan manufacturers, such as high interest rates and limited access to long-term financing making the study a necessary and contextualized contribution.

The theoretical implications of these findings support a resource-based view (RBV), emphasizing that financial imperatives function best when aligned with internal capabilities. The policy implications are equally substantial: financial support schemes, industrial credit policies, and tax incentives must consider the diversity in firm characteristics. Generic financial literacy or SME support programs will not yield uniform outcomes unless tailored to the structural realities of these firms. Thus, by integrating firm characteristics into the interpretation of financial imperatives, my study contributes both a novel methodological lens and policy relevance to an area that has often been treated with oversimplified generalizations.

From Table 4.16, debt equity ratio had a regression coefficient of -0.2143, a Z value of -3.41, and a p-value of 0.003. The Z value of -3.41 is compared with the critical value of -1.96, and since -3.41 is less than -1.96, it indicated that the result is statistically significant at the 5% significance level. Additionally, the p-value of 0.003 is compared with the critical value of 0.05, and since 0.003 was less than 0.05, it further confirmed that the relationship between capital structure (debt equity ratio) and financial performance (earnings per share) was statistically significant. Therefore, we reject the null hypothesis that there was no significant effect of capital structure on financial performance.

The results implied that a unit increase in debt equity ratio reduced earnings per share by 21.43%. This suggested that as the debt-equity ratio increased, the financial performance of manufacturing firms, as measured by earnings per share (EPS), decreased. This implied that higher levels of debt financing relative to equity are associated with lower earnings per share. The negative relationship could indicate that firms with higher leverage are more exposed to financial risk and interest expenses, which might reduce profitability. The results of the study implied that manufacturing firms listed at the Nairobi Securities Exchange should carefully manage their capital structure, as excessive reliance on debt could have detrimental effects on financial performance.

The finding that capital structure, measured by the debt-equity ratio, negatively impacts financial performance reducing earnings per share by 21.43% is significant in the context of Kenyan manufacturing firms. This result aligns with the pecking order theory, which emphasizes a preference for internal financing and cautions against excessive external debt due to rising costs of capital and increased financial risk. However, a robust critique requires engaging with contrasting evidence and exploring the contextual uniqueness of these findings. While Mutua and Atheru (2020) similarly identify detrimental effects of high leverage, other studies, particularly from more developed markets, suggest that moderate debt can enhance performance by providing tax shields and disciplining management. This dichotomy reveals that the relationship between capital structure and firm performance is not universally negative but highly contingent on firm-specific factors such as market conditions, firm size, and industry characteristics, all of which vary substantially in Kenya.

My study advances prior research by explicitly incorporating firm characteristics as an intervening variable, demonstrating how these traits modify the impact of financial imperatives. This approach addresses a critical gap, as many existing studies either treat capital structure effects as uniform across firms or fail to consider contextual heterogeneity. For instance, asset management and working capital management are also shown in my analysis to significantly affect firm performance, with their effectiveness influenced by firm size, operational efficiency, and managerial capability. In policy terms, these findings underscore the importance of encouraging tailored financial strategies rather than blanket recommendations. Policymakers should consider programs that build firm capacity in financial management, including prudent capital structure decisions, while fostering environments where firms can access diverse financing options appropriate to their risk profiles and growth stages. Theoretically, this supports an adaptive financial management perspective that integrates resource-based and contingency views, emphasizing that optimal capital structure and financial imperatives cannot be divorced from firm-specific contexts.

Comparison of the effects of financial imperatives on performance of manufacturing firms measured using Return on equity and Earnings per Share

In comparing the financial performance results of manufacturing companies assessed through Return on Equity (ROE) and Earnings Per Share (EPS), it was evident that both metrics were notably affected by capital structure management, albeit to varying degrees. The R-squared value for ROE stood at 0.4817, suggesting that 48.17% of the variability in ROE can be accounted for by capital structure management. Conversely, the R-squared value for EPS was 0.4574, indicating that 45.74% of the change in EPS was accounted for by capital structure management. While both measures exhibit a comparable level of explanatory strength, the somewhat elevated R-squared value for ROE suggests that the management of capital structure has a slightly greater impact on return on equity than on earnings per share. This might stem from the idea that ROE closely correlates with overall company profitability and capital efficiency, which are significantly shaped by financial management strategies, while EPS may react more to external elements such as market conditions and unique company events that financial priorities don't directly tackle.

The comparative examination of financial objectives on the performance of manufacturing companies through Return on Equity (ROE) and Earnings Per Share (EPS) as indicators uncovers subtle insights that enhance the current literature, especially in the Kenyan setting. In contrast to certain earlier research that might have considered financial performance as a singular idea, the results reveal that although capital structure management significantly affects both ROE and EPS, the degree and responsiveness of these impacts vary between the two measurements. For example, managing capital structure adversely affects both ROE and EPS, but EPS exhibits more sensitivity, probably because it immediately reflects earnings reduced by debt service expenses.

Theoretically, these results enhance financial management frameworks by emphasizing the conditional aspects of capital structure management impacts on performance, based on firm characteristics. In practice, financial strategies should be customized by policymakers and business managers based on the size and context of the firm. For instance, whereas sizable Kenyan manufacturing companies could refine their capital structure and risk management to increase ROE, smaller enterprises might require specific interventions to enhance asset and working capital management for better EPS. Additionally, dividend strategies must take into account the varied effects on shareholders indicated by EPS compared to more extensive profitability metrics such as ROE.
The comparison of results when performance is measured using return on equity (ROE) and earnings per share (EPS) without the intervening effect of firm characteristics showed that both measures were significantly affected by capital structure management, though to different extents. When measured by ROE, the debt equity ratio showed a regression coefficient of -0.2734, with a significant p-value of 0.000, indicating a negative impact on performance. On the other hand, when performance is measured using EPS, the debt equity ratio exhibits a slightly smaller negative coefficient of -0.2143, but with a more substantial Z-value of -3.41 and a p-value of 0.003, reinforcing its statistical significance. The stronger statistical significance observed with EPS, as indicated by the larger Z-value and smaller p-value compared to ROE, suggested that EPS is more sensitive to changes in capital structure management. This could be attributed to EPS being more directly influenced by debt levels in the short-term, reflecting the immediate impact of interest payments on earnings, while ROE, being a broader profitability measure, may absorb such effects more gradually. Therefore, capital structure management appeared to have a more pronounced effect on the financial performance of manufacturing firms when measured using earnings per share.

VII. CONCLUSION AND RECOMMENDATION

Conclusion

Capital structure management was found to have a negative and significant relationship with performance of manufacturing firms. This was supported with a correlation coefficient of -0.5312 and a p value of 0.001. From the panel data regression analysis, capital structure was established to have regression coefficients of -0.2734 with a p value of 0.000 and -0.2512 with a p value of 0.000 without and with an intervening effect of firm characteristics respectively. On the other hand firms should realize that high debts are risky to the firm because of high interests and overburdening of the firm in terms of repayments of the loans. The study would support the pecking order theory by encouraging managers to use more of internal financing other than external financing. Internal financing is more convenient to the firm and reduces risks of incurring a lot of costs through loans. The government should buy shares in these firms and encourage foreign investors to invest in them by buying shares. This would increase the equity of the firm. The government should also support manufacturing firms by creating markets for their products even through making treaties with other countries. This will improve profits for the equity shareholders.

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

Recommendation

The study established that there was a negative and significant effect of capital structure management on performance of manufacturing firms in Nairobi stock exchange. It was therefore recommended that manufacturing firms listed on the Nairobi Stock Exchange should aim to optimize their capital structure by reducing their reliance on debt financing.

It was also recommended that manufacturing firms should strengthen their internal financial management practices to improve equity financing options. Enhanced financial management could include

better budgeting, forecasting, and financial planning, which could attract more investors and boost the firm's equity base.

It was also recommended that firms should focus on improving their operational efficiencies and profitability to reduce the need for external financing. By enhancing operational processes, optimizing resource utilization, and cutting unnecessary costs, firms could generate higher internal funds.

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