

**EFFECT OF DEBT FINANCING ON THE FINANCIAL PERFORMANCE OF
MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES
EXCHANGE**

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DECLARATION

This research project report is my original work and has not been submitted in any other institution for academic awards



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This research project report has been submitted to the University of Nairobi, with my approval as the university supervisor

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ABBREVIATIONS AND ACRONYMS

CMA Capital Market Authority

NSE Nairobi Securities Exchange

SME Small & Medium Enterprise

KMA Kenya Association of Manufacturers

ABSTRACT

This study sought to examine the relationship between debt financing and financial performance of listed manufacturing firms in Kenya. Pecking order and tradeoff theory were used to underpin the study findings. Descriptive research design was adopted in this paper. The study targeted 10 manufacturing firms and financial reports between 2017 to 2021 were used as the unit of analysis. It was determined that there was an insignificant relationship between a combination of the independent variables (debt financing, interests tax shield and liquidity) and dependent variable (financial performance) ($F(1,34) = 1.678$; $p = 0.204$) and they could explain 98.2% variation of financial performance ($\text{Adj } R^2 = 0.982$). It was further determined that a unit increase in debt financing contributed to 14.9% decrease in financial performance but the relationship was insignificant, since $p\text{-value} > 0.05$ ($\beta = -0.149$; $t = -0.879$; $p = 0.389$). It was further determined that a unit increase in interest tax shield contributed to 11.2% decrease in financial performance but the relationship was insignificant, since $p\text{-value} > 0.05$ ($\beta = -0.112$; $t = -0.659$; $p = 0.515$). It was further determined that a unit increase in liquidity contributed to 43% increase in financial performance and the relationship was statistically significant, since $p\text{-value} < 0.05$ ($\beta = 0.430$; $t = 2.777$; $p = 0.009$). It can be concluded that there is a weak negative and insignificant relationship between debt financing and financial performance. The study recommends that managers of these firms should formulate policies that will improve capital management practices and sustain accounts payable as this will improve ROA. This will make manufacturing firms more attractive to investors. Further regulators such as NSE and CMA and by extension ministry of finance should enforce regulations and rules on debt financing of the listed firms to avoid bankruptcy situations of the listed firms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Financial performance is the immediate goal that informs existence of the firm. Financial performance arises from the investments that require heavy outflow of funds (Subagyo, 2021). Thus, firms are forced borrow debts to finance investment projects aimed at enhancing financial performance. Any form of firm's capital structure is critical for management to make corporate financial decisions. The rationale behind this that it directly linked to profitability as determines firm's revenue maximization and cost minimization (Sheikh & Qureshi, 2017). Debt financing is an important source of capital to the firm, since retained may be unavailable or insufficient to support firm operations and improve its financial stability (Momanyi, 2018).

To link the relationship between debt financing and performance, two theories were used. These theories include; Pecking order theory, which was first advanced by Donaldson (1961) and later modified by Myers and Majluf (1984), the theory prefers debt financing over other sources and considers equity as the last resort of financing. This study was also be underpinned by trade off theory, which was initiated by Modigliani and Miller (1958). The theory predicts optimal capital structure through striking a balance between costs of debts and tax benefits, considering other factors to be constant. The theory further opines that business organization should substitute equity with debt or debt with equity until organisation's value is maximized.

Financial performance and debt financing issues are reflected on some of firms listed in the Nairobi Stock Exchange, thus pushing these firms into survival mode. Huge debts has resulted into low prospective return for firms like Home Africa, Mumias Sugar, Uchumi Supermarket, ARM Cement and Kenya Airways (CMA, 2018). Debt can boost financial performance of not only manufacturing firms but also other companies, in terms of return on equity but can also results on the firms' bankruptcy. Companies like Apple and General motors are some of the examples that have come out of bankruptcy through debt financing (Hayes, 2020).

1.1.1 Debt Financing

Financing business activities using debt is related to acquisition of capital from financial institutions with a commitment to repay plus interest (Ni, *et al.*, 2017). The advance expense that ought to be paid on the obtained cash, alongside a repayment plan will be set out in the arrangement between the bank and the borrower (Mazikana, 2021). If the borrower doesn't fulfill their responsibilities set out in the arrangement, it can antagonistically influence on their financial assessment, which in this manner can make it all the more difficult for them to obtain reserves later on and it can similarly provoke finance related disappointment (Phan, 2018). Whether or not a firm suffers fiscally and can't make the arranged portions, they really have a responsibility towards the commitment suppliers.

Debt Financing is the ratio of debt reported in a company's financial statement to total assets (Giannetti, 2019). Most short-term or long-term debt components include bank borrowings, corporate bonds, bank overdrafts, and finance leases. Based on the outcomes obtained, low rates result will lead to the conclusion companies prefer more equity than debt. However, the most important factor of consideration is the balance between debt and equity that firm managers can attain as it is impossible to finance all business activities from equity (Andrieu *et al.*, 2018). The study measured debt financing using debt asset ratio and interest tax shield. Debt asset ratio, indicates the proportion of the firms' assets that is being financed by debt, rather than equity. Further utilization of debt in the capital structure will lead to increased gearing ratio due to the benefit of tax shield. These two measures were proposed in the Trade-off theory as an important explainer of debt financing measurement (Luigi & Sorin, 2019).

1.1.2 Financial Performance

Financial performance "is a general measure of a firm's overall financial health over a given period of time" (Pandey & Sahu, 2017, p 45). The monetary situation of an organization can reveals its stability and competitiveness when compared to others in the market. The financial status of a firm is based on such factors like firm earnings, profits, expenditure and resources that have been accumulated periodically (Ahiadorme, *et al.*, 2018). In most cases, financial performance is assessed using quantitative techniques and presented in

accounting reports, financial statements at quarterly, half year or in a calendar year to inform investors the financial position of the firm (Ahiadorme, *et al.*, 2018).

Financial performance is reflected by firm benefit that is influenced by leverage. Higher benefit typically gives more interior financing and subsequently a lower level of borrowed cash by the firm (Cole & Sokolyk, 2018). Less borrowed finances are expected to back effectively arranged investments. The executives will avoid building of empires and excessive utilization of perquisites, when enormous amounts of cash should be paid to lenders every year (Andrieu, *et al.*, 2018). High profitability brings about higher influence as per the free cash flow theory, yet a high leverage would bring about high benefit in view of the hierarchy hypothesis (Andrieu, *et al.*, 2018).

The financial performance of an organization is estimated utilizing accounting key execution markers. Return on resources, (a pointer of how advantageous an association is near with its all-out resources), Return on sales (a proportion of how effectively an organization turns sales into benefits) and Earnings before Interest and Tax (an organization net income before pay tax expense and interest expenses are deducted). The benefit of these estimations is their overall accessibility, since each benefit oriented association creates these figures for their yearly monetary reporting (Fredrick, 2018). The study used return on assets measurement to assess the gain manufacturing have realized after investing borrowed funds.

1.1.3 Debt Financing and Financial Performance

From the pecking order theoretical point of view, more profitable firms have a strong incentive of using less debts and more retained earnings. Thus, negative relationship is predicted under this pecking order theory between debt financing and financial performance (Donaldson, 1961). This negative nexus implies that as a firm improves on its financial performance, more preference will be given to internal as opposed to external source of funds like debts (Donaldson, 1961). External sources of funds like debts are highly prone to information asymmetry as compared to internal funds. From the tradeoff theoretical perspective, firms may have a strong incentive to use more debts because of the associated tax advantage that leads to wealth maximization (Myers, 1984). Thus, in light of the tradeoff theoretical stance, a positive relationship was predicted between debt

financing and financial performance. This positive nexus implies that as the firm utilizes more debts, as the tax advantage increase which helps to improve on financial performance (Myers, 1984).

Empirical evidence by Koskei (2017) indicates existence of positive nexus between debt financing and financial performance. However, studies by Onchonga, Muturi and Atambo (2016), Gabrijelcic, Herman and Lenarcic (2016) and Kibunja (2020) provide evidence that debt financing and financial performance are inversely linked with each other. Rahman, Kakuli, Parvin and Sultana (2020) established an insignificant nexus between debt financing and performance at firm level. Based on this, it was asserted that debt financing has mixed relationship with financial performance which can either be positive or negative. This inconsistent in literature provide inconclusive evidence and calls for further studies.

1.1.4 Manufacturing firms Listed at Nairobi Securities Exchange

Currently, there are 63 listed firms in the Nairobi Securities Exchange, according to the 2020 – 2021 handbook by the Nairobi Securities exchange. These firms can be categorized into: exchange traded fund, real estate investment trust, telecommunication and technology, investment services, insurance, energy and petroleum, construction and allied, automobiles and accessories, commercial and services and banking. In the manufacturing and allied category there are 10 listed firms. These manufacturing activities of these firms range from gas production, tobacco items, brew and spirits, natural product canning, flour processing and sugar refining (NSE, 2021). Compared to their counterparts in other sectors, manufacturing firms always a have a need to raise more capital owing to the huge capital requirements. Being listed in the NSE provides them an opportunity to raise the funds through equity however, this is not always sufficient and, on most occasions, have had to resort to debt financing (Olweny, Mutua & Mukanzi, 2020).

The high capital investment requirement of manufacturing firms has seen many firms being stifled by the unsustainable debts. A situation that has also affected their financial performance and posed a threat to their survival. This was demonstrated by firms like Mumias Sugar Ltd that is currently under receivership due to an outstanding debt of Ksh 545 million to Kenya Commercial Bank (Kivuva, 2019). Eveready East African Ltd on the

other hand, liabilities exceeded its assets by Ksh 2.1 billion in the first quarter of financial year 2022 due to long-terms and shot-term debts. This was indicative that it had no assets to back up its Ksh 178.5 million capitalization. The debts have also seen the company making losses over the years reporting a loss of Ksh 25.9 billion in 2021 Financial year (Andae, 2022).

This trend in performance of these firms in Kenya was wanting since the sector was envisioned to propel Kenya to a middle-income status by 2030. The Kenyan Vision 2030 blueprints envisages increasing the manufacturing contribution to GDP to 15 percent up from the current 7.5 percent. If this trend was left unchecked, the manufacturing sector risk collapsing and Kenya was likely to miss out its industrialization aspiration targets (Olweny *et al*, 2020).

1.2 Research Problem

The impact of debt financing on the profitability and financial performance is of considerable significance to not only manufacturing companies but also all business enterprises. Debt financing in most cases is usually less costly compared to equity financing and at the same time the company is still able to retain its control compared to issue of equity shares which contributes to dilution of membership. Further debt financing is subject to interest tax shield benefits and it also allows firms to leverage on small amounts of capital to create business growth (Chen, *et al.*, 2022). Despite the significance of debt financing listed manufacturing firms in Kenya are facing financial distress due to debt management and are gradually facing imminent demise (Mukoma, 2020).

Currently it is evident that manufacturing firms listed in the NSE are facing financial problems. For instance, Mumias Sugar Company Limited among others that have consistently been positing financial losses and placed under receivership by KCB due to an outstanding debt of Ksh 545 million (Kivuva, 2019). Similarly, Eveready East African Ltd liabilities exceeded its assets by Ksh 2.1 billion in the first quarter of financial year 2022 due to long-terms and shot-term debts (Andae, 2022). Generally, manufacturing is a bedrock of Kenyan economy and if this situation is unresolved, it is likely to stifle Kenya's economy and attainment of vision 2030 aspirations. Despite all these concerns about financial performance of the listed manufacturing firms, little has been done to reverse this

trend. The government of Kenya envisages these manufacturing firms as one of the key pillars in realization of Vision 2030 (Chinaemerem & Odita, 2018).

Despite the existing problems, the preceding studies have producing contradicting results on the relationship between debt financing and financial performance. Wambua (2019) studied how financial performance of listed NSE firms were affected with debt financing. The study used descriptive research and secondary data from financial reports. The study found that there was a weak negative relationship between debt financing and financial performance. Muiruri (2020) also studied the relationship between financial performance debt financing among firms listed in the NSE. The study targeted all the listed firms in the NSE and panel data was used. The study found that there was a significant positive relationship between debt financing and financial performance. Finally, Karuma, *et al.*, (2020) studied the effect of debt financing (corporation tax rate, interest rates, long and short-term debt) on financial performance of listed manufacturing firms in the NSE. The study used correlation and panel research design, where secondary data between 2013 to 2017 of nine companies in the NSE was examined. The study found that there was a significant and positive relationship between accounts payables and ROA. Based on the reviewed studies it was evident that there exist a contextual and methodological research gap. Hence this study aimed to answer the research question “what is the effect of debt financing on financial performance of manufacturing firms listed at the Nairobi Securities Exchange?”

1.3 Research Objective

To determine the effect of debt financing on financial performance of manufacturing firms listed at the Nairobi Securities Exchange.

1.4 Value of the Study

The study will also be useful to key stakeholders in the financial field and bankers in developing measures that will lead to improvement of financial knowledge on financial leverage and capital structure decisions. The government may also find it necessary to give more importance of financial education policy makers to formulate best ways in which firms can trade at the Nairobi Securities Exchange and other financial markets.

Information from the study will also be valuable to managers in manufacturing firms in making decisions relating to debt financing on financial matters. Firm managers will be able to understand when to use debt, the right structure of capital and its effects like taxation shields and payment, bankruptcy and profitability.

Academicians and researchers will benefit from this study as it will act as an empirical source for their research. The findings will be also making most needed information on shaping firm manager and financial service provider thinking and opinions on the subject.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers the study Theoretical review, a Review of financial determinants, Empirical review, Summary of literature and Research gap and the Conceptual framework of the study.

2.2 Theoretical Review

The study theoretical review covered the trade-off theory and pecking order theory will be used to anchor the study.

2.2.1 Trade-Off Theory

The tradeoff theory was postulated by Modigliani and Miller (1958). It states that a firm borrow finances to meet its capital needs while it also considers the amount of equity that a firm can raise (Ramli, Ghani, Haron & Embi, 2020). It further imparts that there is a benefit to financing utilizing obligation; borrowing attracts tax break and grace period that reduces the expense on the part of the firm. Firms enjoy a number of benefits when they borrow from banks as they get tax benefits or grace period with zero payback hence reducing firm expenses and impacting positively on firm returns. As demonstrated by the theory there was an ideal capital design that supports the value of a firm.

Modigliani and Miller (1958) show that the value of a firm isn't affected by its capital design, which exhibits that no ideal capital construction exists. This proposes that there is no expansion from deftly trading among commitment and value, because the costs of the different kinds of capital don't change autonomously (Obuya, 2017). The later approach of joining firm and individual expense into Modigliani and Miller's model shows that an optimal capital construction, which could increase the value of the firm may really exist (Cole and Sokolyk, 2018). Regardless, it also raises the critical repercussions that firms ought to back their endeavors absolutely with commitment to boost the complete worth of the firm. This is unreasonable and disavows reality, since firms can't use commitment just in their capital construction (Isin, 2018).

The static tradeoff theory helps firm directors in capital design choices to stay aware of the congruity between the potential gains and disadvantages of commitment and value

financing (Hang, 2015). Furthermore, the cost of capital can't be restricted by extending the commitment level at a specific point, the cost of commitment will end up being more exorbitant than the cost of value since it constructs the Leverage level and in view of which the peril of loan boss augmentation because of which their necessary speed of return grows (Clemente-Almendros and Sogorb-Mira, 2018). The limitations in applicability of the theory are connected to the fact that capital costs cannot be reduced through a rise in debt levels. This was because to some point, it may become unattainable for the firm to finance the increased debt level (Clemente-Almendros & Sogorb-Mira, 2018).

The preceding studies by Wambua (2019); Muiruri (2020) and Karuma, *et al.*, (2020) have used this theory to interlink financial performance and debt financing. This theory was relevant in this study, since listed manufacturing firms can use it selecting the optimal capital structure that may not lead to bankruptcy through striking debt and equity levels. Through this these firms will be able to finance their operations efficiently and generate profits as opposed to disregarding equity and debt levels.

2.2.2 Pecking Order Theory

Myers and Majluf (1984) developed the pecking order theory which postulates that firm administration strongly prefer internal generation of resources as a source of new funds as compared to getting financing from financial institutions. The order was dictated by asymmetric information, released onto the market by each financing category that business managers analyze to make a prudent decision of cost-effective source of financing regardless of debt-equity ratio target (Myers & Majluf, 1984). This suggests that, for firms to improve on their cash flows and increase profits, they need to follow a certain hierarchical fashion of financing their operations starting with least cost source of retained earnings, safe debt and lastly equity.

There have been various proponents as well as critics of the theory. Notably among the proposer was Teshome, Debela and Sultan (2018) who averred that those who considered that organizations should give common stock to raise finance to embrace an important investment opportunity. Among the critics is Hamza and Saadaoui (2018) who asserted that the Pecking Order hypothesis contrasts from the compromise hypothesis in that there was no obvious debt-equity proportion.

The pecking order theory is significant in business since data accessible to financial backers is topsy-turvy and they think that its troublesome in settling on a decision among outer and inward financing (Morozko and Didenko, 2018). Besides, borrowed cash financing was superior to equity financing since cost of borrowed cash was a lot lesser than the expense of equity. The major advantage of hierarchy hypothesis was that it thinks about the powerful nature of financial decision making that firm managers have to make in day-to-day operations. The subsequent constraint was that it over-looks the issues related with the choices of financial managers to amass such a lot of financial leeway that they become ensured to market discipline (Matar & Eneizan, 2018).

The preceding studies by Wambua (2019); Muiruri (2020) and Karuma, *et al.*, (2020) have used this theory to interlink financial performance and debt financing. This theory is relevant to this study, since managers of listed manufacturing firms can lean towards the arguments pecking order through maximizing internal sources (retained earnings) of funds to finance their operations before seeking external financing. The theory can also be used by managers of the manufacturing firms in making capital structure decisions of choosing debt over equity which can lead to dilution of firm's control.

2.3 Determinants of Financial Performance

The subsequent sections detail the determinants of financial performance of manufacturing firms

2.3.1 Debt Financing

Debt increases financial leverage in the firm and it act as disciplinary tool for managers to undertake activities that lead to wealth maximization. However, a rise in debt within the firm can reach a level where it becomes unstable thus negatively affecting the performance. Thus, the use of debts raises the level of risks in the firm (Phan, 2018). From the pecking order perspective, a negative relationship is predicted between debt financing and financial performance (Donaldson, 1961). On the other hand, the tradeoff theory predicts that debt financing enhances financial performance of the firm (Myers, 1984).

2.3.2 Interest Tax Shield

Modigliani and Miller (1963) worked on their previous recommendation on capital design model by including organization charge. They further case that the primary advantage of using commitment as a wellspring of financing was the way that the interest portions on commitment are charge deductible which makes a "charge safeguard" for firms (Hang, 2015). This assessment safeguard allows a firm to pay lower charges while using commitment capital than they would while using simply their own capital (Rasyid, 2015). This infers that by recollecting a colossal piece of commitment for the capital design, it will cut down the authentic after-charge cost of capital, which will in this manner raise the worth of the firm (Wambua, 2019). Factory administrator's expense assortment proposal raises the critical consequences that firms should support their exercises absolutely with commitment to intensify the complete worth of the firm (Hang, 2015). This was unreasonable and refutes reality, since firms can't use commitment just in their capital design.

So far, the spotlight has been set on the upsides of using commitment, which insinuates cut down charges paid by firms as a result of the way that the interest portions on the commitment are charge deductible

2.3.3 Liquidity

Liquidity was shown by an organization's financial position to avail necessary resources that cover all financial and financial obligations that the firm has with creditors. This incorporates commitments that developed inside a time of one year and costs of the organizations working cycle (Githire and Muturi, 2015). It was figured by secluding current assets with the current liabilities. Exactly when a firm can't meet its present responsibilities it should be illiquid. Liquidity the board can be cultivated by managing assets, current liabilities and long stretch stores.

At the point when a firm was restricted as far as liquidity it cannot meet the momentary commitments and will select to acquire for that reason. In any case, because of the resource creation all things considered, the expense of the acquired assets will be high (Chen and Strange, 2015). This was on the grounds that the financial organizations propelling credit

assessed the firm as unsafe as far as installment of the borrowed cash. Then again, holding a lot of liquidity implies the firm won't put resources into different ventures that experience the chance cost of holding cash. In both the above cases the advantage of a firm was impacted conversely.

2.4 Empirical Review

Internationally, Gabrijelcic, Herman and Lenarcic (2016) examined the impact of financing through obligation on the monetary efficiency of firms prior and then afterward the monetary emergency in Slovenia. The exploration designated a populace of best performing firms in Slovenia and information was gathered utilizing optional information assortment devices. After the investigation of gathered information, it was determined that there was a negative connection between obligation financing and firm efficiency in both instances. Through a comparative analysis of firms across sectors, it was further established that firms which relied on equity financing performed much better than those which used debt. The study recommended that national government should formulate policies that bars fragmentation of financial markets during economic crisis. Alkhazaleh and Al-Dwiry (2018) set up that money lease has gotten a choice as opposed to medium term and longer-term financing particularly in finance related business areas when there was a credit pound for these sorts of financing. Furthermore, the examination found that cash renting influenced benefit from resources anyway no impact on the benefit from value.

Nazir, *et al.*, (2020) relied on empirical evidence from the Pakistan Stock Exchange, where the relationship between firm performance and debt financing was examined. The study used fixed and random effects and ordinary least squares regression models to analyse a cross-sectional data from 30 firms listed in the stock exchange. The study found that profitability of the firms was impacted by both long and short-term debt. The study further revealed that firm size and sales growth significantly and positively affected profitability of non-financial sector firms. The study recommended that managers of these firms should focus on satisfactory debt levels.

Locally, Wambua (2019) studied how financial performance of listed NSE firms were affected with debt financing. The study used descriptive research and secondary data from financial reports was used. The study found that there was a weak negative relationship between debt financing and financial performance. The study further found that there was

a significant weak positive relationship between liquidity and financial performance. The study finally found that there was an insignificant relationship between firm size and financial performance. The study recommended managers should ensure the liquidity of the firms was at the optimal level for them to meet their debt obligations as they fall due.

Muiruri (2020) also studied the relationship between financial performance debt financing among firms listed in the NSE. The study targeted all the listed firms in the NSE and panel data was used. The study found that there was a significant positive relationship between debt financing and financial performance. The study further found that liquidity and firm size are positively and significantly associated with financial performance of the firms. The study recommended that investors should look for firms that employ debt financing and have good working capital management practices to invest in.

Finally, Karuma, *et al.*, (2020) studied the effect of debt financing (corporation tax rate, interest rates, long and short-term debt) on financial performance of listed manufacturing firms in the NSE. The study used correlation and panel research design, where secondary data between 2013 to 2017 of nine companies in the NSE was examined. The study found that there was a significant and positive relationship between accounts payables and ROA. The study also revealed that there was a significant relationship between interest payment and bank loan and ROA of the firms. The study recommended that managers of these firms should formulate policies that sustained accounts payable as this improved ROA.

2.5 Summary of the Literature Review and Research Gaps

Study by Gabrijelcic, *et al.*, (2016) in Slovenia created a methodological research gap, since it failed to improve the identification of lending channels by banks and establishing the relationship of the firm balance sheets and matching bank. This gave more details on the potential pass-through to financial performance and credit supply side factors. Nazir, *et al.*, (2020) study on Pakistan Stock Exchange, created a contextual research gap since it only focused on the major sectors of the stock exchange, thus creating research gap in smaller sectors. This study was limited in terms of geographical borders thus creating a research gap in other parts of the world.

Wambua (2019) studied how financial performance of listed NSE firms were affected with debt financing. Created a conceptual research gap since asset tangibility, debt finance, firm

liquidity and firm size could only explain 4.5% of financial performance. The study also created a contextual research gap since it only focused on the non-financial companies. Further study by Muiruri (2020) created a contextual research gap since it only focused on the listed firms thus creating research on firms like SMEs and was also only limited to the Kenyan context. Finally, Karuma, *et al.*, (2018) study on the listed manufacturing firms in Kenya, created a methodological research gap since it only focused on the duration of five years.

2.6 Conceptual Framework

The relationship between debt financing and financial performance, depicted in Figure 2.1. Each of these independent variables have causes and effect on the dependent variable, as explained in the review of the variables on the literature review. Dwi, (2011) stated that it was important to conceptualize variables because it was important in testing hypotheses. In this study, independent variable was debt financing (Debt/Asset), liquidity and interest tax shield are depicted as control variables, while the dependent variable was financial performance (ROA)

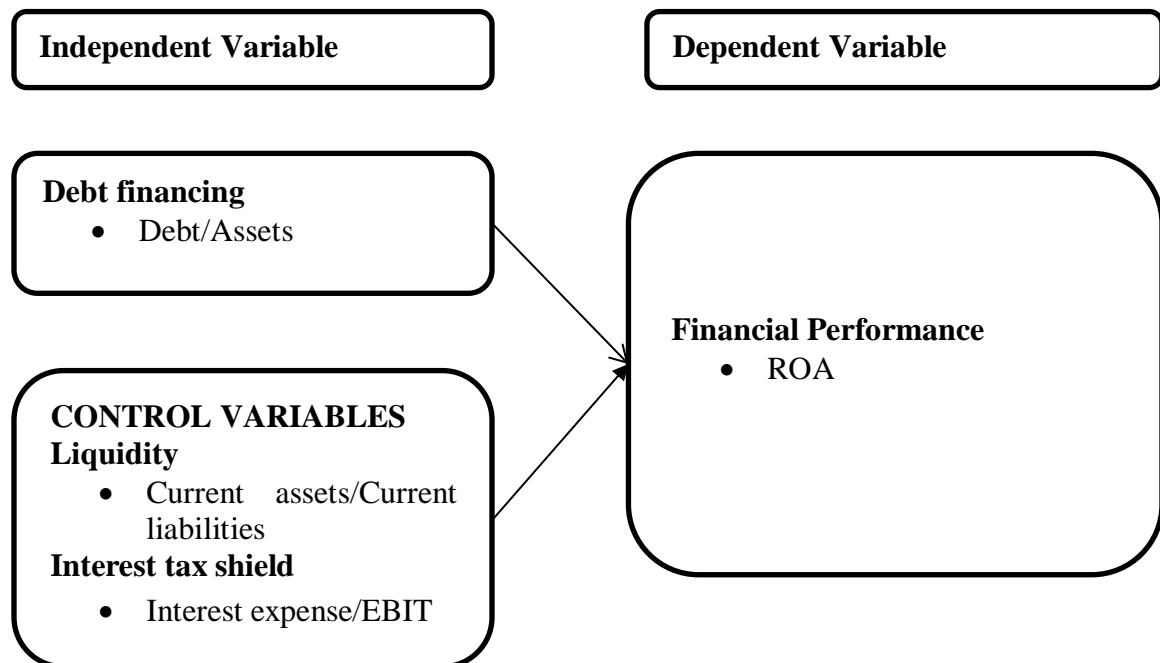


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The relevant design, targeted participants, means of gathering and processing the views are detailed in this chapter.

3.2 Research Design

This research study employed a descriptive research design. The study adopted a descriptive research design which attempted to obtain information from a part of a population to establish the estimate status of the population on a single or more factors (Creswell, 2013). This design had the upper hand of stating the exact visualization of the population status fully by providing a description of the characteristics of certain scenarios as they are. Hence this study adopted this research design as it is more appropriate.

3.3 Target Population

Mbokane (2019) defines an objective populace as a bunch of subject or articles that a scientist was keen on understanding their elements and can be utilized to clarify the connection between concentrate on factors. This study targeted 10 listed manufacturing firms listed in the NSE and their audited financial statements from 2017 to 2021, were used as the unit of analysis. Because of the modest number of firms to be locked in for the review, a census will be used hence all firms will be part of the study. The sample size was all the 10 manufacturing firms listed.

3.4 Data Collection

The study relied on secondary data and from published financial statements from manufacturing firms targeted by this research, the study relied on financial reports for the past 5 years, from 2017 to 2021. This period was selected because it is most currently hence data would easily be available. Secondary information was the outcome of investigations done by other researchers for different purposes apart from the one that the data was being used for. The study gathered secondary data on net income, total assets, debts, interest expense, EBIT, current assets as well as current liabilities.

3.5 Operationalization of Variables

Variable	Definition	Measurement	Source
Financial Performance	A general extent of associations in every day money related to prosperity over time	ROA= $\frac{\text{Net Income}}{\text{Total Assets}}$	Omete & Isabwa (2017)
Debt Financing	Represented by financial leverage of the firm	Debt Assets Ratio = $\frac{\text{Debt}}{\text{Assets}}$	Isin (2018)
Interest Tax Shield	The benefit that accrues from the use of debt in the firms' capital structure	Interest Tax Shield = $\frac{\text{Interest Expense}}{\text{EBIT}}$	Kibunja (2020)
Liquidity	Financial position of the firm to enable it meet its daily financial obligations	Current Ratios = $\frac{\text{Current Assets}}{\text{Current Liability}}$	Alkhazeleh & Al-Dwiry (2018)

3.6 Data Analysis

As per Cooper and Schindler (2013), data analysis entails disseminating data into manageable units, summarizing it, observing for trends and patterns and the application of statistical techniques such as frequencies, mean, standard deviation and variance. In order to break down the distinctions among bunch implies and their related strategies, quantitative data was used inferential statistics to ascertain variable, regression, correlation and analysis of variance. The research used the model shown below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

β_1 , β_2 , and β_3 is the relapse coefficient of the independent variables

Y = Financial performance

β_0 = Constant

X_1 = Debt financing

X_2 = Interest tax shield

X_3 = Liquidity

ϵ is the blunder term typically appropriated about a mean of zero.

3.6.1 Diagnostic Tests

Diagnostic tests are usually conducted to test the assumptions of regression analysis. The study tested for multicollinearity, autocorrelation and heteroscedasticity assumption as discussed in the subsequent sections.

3.6.1.1 Multicollinearity Test

Multicollinearity is a situation when at least one of the independent variables are correlated with each other (Warner, 1963). Presence of multicollinearity was a strong violation of the regression analysis assumptions. Multicollinearity was tested using Variance Inflation Factor (VIF) test. If VIF were equal to or greater than 2.5 there it was assumed that multicollinearity exists (Sevier, 1957).

3.6.1.2 Autocorrelation Test

Autocorrelation arises when there was serial correlation in the data. The condition mostly arises in time series data. Autocorrelation was tested utilizing Durbin Watson test. A value of 1.5 to 2.5 meant no autocorrelation distinguished in the example. Values from 0 to fewer than 2 highlight positive autocorrelation and values from 2 to 4 methods negative autocorrelation (Lewis-Beck & Lewis-Beck, 2015).

3.6.1.3 Heteroscedasticity Test

When the variance of the error term in the model was constant across predicted values homoscedasticity condition was assumed (Williams, Grajales & Kurkiewicz, 2013). Heteroscedasticity/homoscedasticity was tested utilizing Glejser test. The Glejser test is just legitimate when the arbitrary blunder is evenly disseminated. The resultant p-values above 0.05 implied presence of homoscedasticity which is desirable (Berry, 1993).

3.6.2 Significance Test

F-test was utilized to test the importance and significance of the above equation, where p-value of less than 0.05 considered significant. The significance of the correlation analysis depended on either 0.01 or 0.05. Significance of the regression coefficients was also

determined at $p < 0.05$, to establish the relationship between the study variables. Data to be obtained was assessed through statistical inference to prove acceptance or rejection of research hypothesis. The study hypothesis was null hypotheses (H_0) which after analysis was accepted or rejected, if rejected the alternative hypothesis (H_a) of the study was accepted. The value of R square was interpreted linking financial performance and debt financing.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter captures data analysis, presentation and interpretation on the collected from Nairobi Stock Exchange (NSE) between 2017 and 2021. The data was based on: financial performance (ROA), debt financing (Debt/Assets), interests tax shield (Interest Expense/EBIT) and liquidity (Assets/Current Liability). The collected data was aimed at establishing the impact of debt financing on the financial performance of listed manufacturing firms in the NSE.

4.2 Descriptive Statistics

Table 4.1 describes financial performance, debt financing, interest tax shield and liquidity in terms of mean standard deviation, skewness and kurtosis.

Table 4. 1: Descriptive Statistics

	Mean	Std.	Skewness	Kurtosis		
	Statistic	Deviation	Statistic	Std.	Statistic	Std.
		Statistic	Statistic	Error		Error
Financial Performance	18.7123	7.79552	-.203	.199	1.382	.395
Debt Financing	12.5962	4.10217	-.086	.199	-.292	.395
Interest Tax Shield	10.1040	5.13256	.397	.199	-1.202	.395
Liquidity	9.4067	4.79859	.388	.199	-1.140	.395

Table 4.1 indicated that the average financial performance was 18.7123 and standard deviation was 7.79552. While it was also determined that debt financing had a mean of 12.5962 and standard deviation of 4.10217. The findings also showed that interest tax shield was 10.1040 and standard deviation was 5.13256. Finally, the average liquidity of the firms was 9.4067 and standard deviation was 4.79859. Majority of these variables had a standard deviation which implied that there was a high variation from the mean since standard deviation was high. Kline (2005) asserts that the measures of skewness and

kurtosis are used to determine the normal distribution of the data. If the skewness value was greater than + 1.0, then the data was skewed to the right and if the value was less than -1.0, then the data was skewed to the left. In this distribution majority of the variables were positively skewed hence they were mainly skewed to the right. Kurtosis values were also used to gauge the distribution of the data. The values ranged from -.552 to 1.382, based on the argument by George and Mallery (2010), kurtosis values ranging from -2 to 2 indicated that the presence of univariate distribution, hence the data on these variables were normally distributed.

4.3 Tests for Regression Assumptions

Normality, multi-collinearity, linearity, serial autocorrelation and homoscedascity tests are some regression assumptions tests that were tested in this study. Latan and Ghozali, (2015) and Hair, *et al.*, (2010), asserted that for the results to be the actual representation of the study sample, regression assumptions must be met.

4.3.1 Normality Tests

Normality tests was carried out since this study was anchored on the following parametric tests; correlation coefficient, coefficient of determination, ANOVA and regression coefficient, which are majorly based on the assumption of normal distribution of data, based on the arguments by Ghasemi and Zahedisl, (2012). Ghasemi and Zahedisl, (2012) recommends Shapiro-Wilk test owing to its higher power, compared to Kolmogorov-Smirnov test.

Table 4. 2: Normality Tests

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financial Performance	.337	36	.000	.435	36	.000
Debt Financing	.177	36	.006	.916	36	.009
Interest Tax Shield	.209	36	.000	.820	36	.000
Liquidity	.120	36	.100*	.947	36	.045

*. This was a lower bound of the true significance.

a. Lilliefors Significance Correction

From table 4.2, showed that that all the p-values (0.000) of the study variables are less than 0.05 based on the Shapiro-Wilk tests and their statistical values ranged between 0.435 to

0.947, implying data on financial performance, debt financing, interest tax shield and liquidity are normally distributed. In addition, Kolmogorov-Smirnov test, indicated that all the variables are normally distributed, since all the variables had a p-value of less than 0.05, except for liquidity.

4.3.2 Multi-Collinearity Tests

Multi-collinearity problem exists in a regression analysis, if the predictor variables are highly ($r > 0.9$) or perfectly ($r=1$) correlated (William, *et al.*, 2013). Belsley *et al.*, (1991) adds that multicollinearity problem contributes to the inflation of standard errors and confidence intervals, which led to unstable estimates of the coefficients of individual predictor variable. Tolerance values and variance inflation factor (VIF) was used to test multi-collinearity assumption. Field (2009) states that tolerance values of less than 0.2 and VIF values of above 10 indicates the existence of multi-collinearity problem.

Table 4. 3: Tolerance and VIF Values

Predictor Variable	Collinearity Statistics	
	Tolerance	VIF
Debt Financing	.746	1.342
Interest Tax Shield	.773	1.296
Liquidity	.772	1.298

Table 4.3, indicated that debt financing, interest tax shield and liquidity as a predictor variable in the model had a tolerance value of ranging between 0.746 to 0.773, which is less than 2 and value inflation factor of ranging between 1.081 to 1.342 which is less than 10. This implied that multi-collinearity was not a problem in the regression analysis.

4.3.3 Serial Autocorrelation

This assumption implies that the residuals of linear regression are independent (Hair *et al.*, 2017). Durbin-Watson statistics can be used to test this assumption, where its values range between 1 to 4 and the recommended threshold ranges between 1.5 to 2.5 as stated by Hair *et al.*, (2017). Table 4.7 indicated that D-W statistics ranged between 1.717, which is within the recommended threshold.

4.3.4 Homoscedascity Test

This assumption implies that the data must have the same variance or the same scatter. There are various tests for detecting homoscedacity as a regression assumption but in this

study Bartlett tests was employed, where the significance ($p > 0.05$) of the Bartlett statistics was observed.

Table 4. 4: KMO and Bartlett Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.539
Bartlett's Test of Sphericity	Approx. Chi-Square	93.834
	Df	10
	Sig.	.000

Table 4.3 showed KMO measure of sampling adequacy with a value of test statistic as 0.539, which was above a threshold of 0.5, which implied that the sample size was adequate. Bartlett's test of sphericity indicated ($X^2 = [df=10] 93.834; p = 0.000$), which implied that there was equality (homogeneity) of variance, since $p\text{-value} < 0.05$.

4.4 Correlation Analysis

Pearson correlation analysis was carried out to examine the nature and direction of the relationship between independent variables (debt financing, interests tax shield and liquidity) and dependent variable (financial performance). To assess the association between the study variables Pearson Correlation (r) was used. Kothari (2013) asserted that when r is above ± 0.50 , the relationship was considered strong, when r ranges between ± 0.30 to ± 0.49 the relationship was considered medium and finally the relationship was considered weak if r ranges between ± 0.1 to ± 0.29 .

Table 4. 5: Pearson Correlation

		Interests			Financial
		Debt	Tax	Liquidity	Performance
		Financing	Shield		
Debt Financing	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	150			
Interest Tax Shield	Pearson Correlation	.747**	1		
	Sig. (2-tailed)	.000			
	N	150	150		
Liquidity	Pearson Correlation	-.030	-.1150	1	
	Sig. (2-tailed)	.863	.430		
	N	150	150	150	
Financial Performance	Pearson Correlation	-.149	-.112	.430**	1
	Sig. (2-tailed)	.386	.515	.009	
	N	150	150	150	150

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

Table 4.6 indicated that there is a weak negative correlation between debt financing and financial performance ($r=-0.149$; $p= 0.386$) and the relationship was statistically insignificant since $p>0.01$. It was further determined that there was a weak negative correlation between interest tax shield banks and financial performance ($r= -0.112$; $p= 0.515$) and the relationship was statistically insignificant since $p>0.01$. On the correlation between liquidity and financial performance it was determined that the relationship was positively medium and significant ($r= 0.430$; $p= 0.009$).

4.5 Regression Analysis

Simple linear regression was applied to establish a causal relationship between independent variables (debt financing, interests tax shield and liquidity) and dependent variable (financial performance).

Table 4. 6: Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6752.721	106.357		63.491	.000
Debt Financing	-.002	.003	-.149	-.879	.386
Interest Tax Shield	-.092	.000	-.112	-.659	.515
Liquidity	.014	.005	.430	2.777	.009

a. Dependent Variable: Financial Performance

Adj R² =0.982; F (3,146) = 1.678; p =0.204; D-W = 1.717

It was determined that there was an insignificant relationship between a combination of the independent variables (debt financing, interests tax shield and liquidity) and dependent variable (financial performance) (F (df=3,146) = 1.678; p =0.204) and they could explain 98.2% variation of financial performance (Adj R² =0.982). It was further determined that a unit increase in debt financing contributed to 14.9% decrease in financial performance but the relationship was insignificant, since p-value > 0.05 (β = -0.149; t = -0.879; p = 0.389). It was further determined that a unit increase in interest tax shield contributed to 11.2% decrease in financial performance but the relationship was insignificant, since p-value > 0.05 (β = -0.112; t = -0.659; p = 0.515). It was further determined that a unit increase in liquidity contributed to 43% increase in financial performance and the relationship was statistically significant, since p-value < 0.05 (β = 0.430; t = 2.777; p = 0.009).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter the researcher addressed summary of findings, conclusion and recommendation on the impact of debt financing on the financial performance of listed manufacturing organizations. The chapter also addressed suggestions for further findings on these concepts.

5.2 Summary of Findings

On the descriptive statistics, it was found that average financial performance was 18.7123 and standard deviation was 7.79552. While it was also determined that debt financing had a mean of 12.5962 and standard deviation of 4.10217. The findings also showed that interest tax shield was 10.1040 and standard deviation was 5.13256. Finally, the average liquidity of the firms was 9.4067 and standard deviation was 4.79859. Majority of these variables had a standard deviation which implied that there was a high variation from the mean since standard deviation was high. In this distribution majority of the variables were positively skewed hence they were mainly skewed to the right. Kurtosis values were also used to gauge the distribution of the data. The values ranged from -.552 to 1.382.

On the correlation analysis, it was revealed that there is a weak negative correlation between debt financing and financial performance ($r=-0.149$; $p= 0.386$) and the relationship was statistically insignificant since $p>0.01$. It was further determined that there was a weak negative correlation between interest tax shield banks and financial performance ($r= -0.112$; $p= 0.515$) and the relationship was statistically insignificant since $p>0.01$. On the correlation between liquidity and financial performance it was determined that the relationship was positively medium and significant ($r= 0.430$; $p= 0.009$).

On the regression analysis, it was determined that there was an insignificant relationship between a combination of the independent variables (debt financing, interests tax shield and liquidity) and dependent variable (financial performance) ($F(1,34) = 1.678$; $p =0.204$) and they could explain 98.2% variation of financial performance ($Adj R^2 =0.982$). It was further determined that a unit increase in debt financing contributed to 14.9% decrease in

financial performance but the relationship was insignificant, since $p\text{-value} > 0.05$ ($\beta=-0.149$; $t=-0.879$; $p=0.389$). It was further determined that a unit increase in interest tax shield contributed to 11.2% decrease in financial performance but the relationship was insignificant, since $p\text{-value} > 0.05$ ($\beta=-0.112$; $t=-0.659$; $p=0.515$). It was further determined that a unit increase in liquidity contributed to 43% increase in financial performance and the relationship was statistically significant, since $p\text{-value} < 0.05$ ($\beta=0.430$; $t= 2.777$; $p=0.009$).

5.3 Conclusion

Based on the study analysis and findings, it was determined that there is a weak negative and insignificant relationship between debt financing and financial performance as per the correlation analysis. The study also concluded that an increase in debt financing would contribute to a decrease in financial performance of the listed manufacturing firms in Kenya. This contradicts tradeoff theory which supported the use of debt financing to improve financial performance. The conclusion was in sync with the pecking order theory, which puts priority on the retained earnings. This also contradicts the findings by Wambua (2019); Muiruri (2020) and Karuma, *et al.*, (2020)

The study also concludes that there was a weak negative and insignificant relationship between interest tax shield and financial performance of the firms based on the correlation analysis. The study also revealed that an increase in interest tax shield would contribute to decrease in financial performance of the listed manufacturing firms. This has been attributed to the fact that an increase interest tax shield contributes to increased debt in the capital structure which has a negative impact on the financial performance. This contradicts the assertion by Rasyid (2015), who opined that tax shield act as a “charge safeguard”

Unlike the other two determinants of financial performance, it can be that there was a positive medium relationship between liquidity and financial performance of the listed firms. The study finally concluded that an increase in liquidity would contribute to an increase in financial performance of the listed firms, this can be attributed to the fact that increased liquidity enables firms to meet their financial obligations thus improving

financial performance in the long run. This in tandem with the conclusion by Githire and Muturi, (2015) and Chen and Strange (2015).

5.4 Recommendations

Based on the study findings and conclusions, the study recommends that managers of these firms should focus on satisfactory debt levels. That managers of these firms should formulate policies that will improve capital management practices and sustain accounts payable as this will improve ROA. This will make manufacturing firms more attractive to investors. Further regulators such as NSE and CMA and by extension ministry of finance should enforce regulations and rules on debt financing of the listed firms to avoid bankruptcy situations of the listed firms.

Based on the conclusion that improved liquidity significantly contributes to an improved financial performance, this study recommends that managers of listed manufacturing firms should ensure the liquidity of the firms is at the optimal level through implementing effective working capital management practices, for them to meet their debt obligations as they fall due. External stakeholders such as individual investors and investment banks tend to prefer firms with optimal liquidity levels.

5.5 Suggestions for Further Studies

Based on the study analysis it was evident that liquidity, debt financing and interest tax shield does not 100% explain financial performance, which implied that there exist other firm factors which could explain financial performance, hence future studies should focus on these factors. The study also created a contextual research gap since it only focused on the listed manufacturing firms, future studies should focus on all the listed and non-listed manufacturing firms to facilitate comparison of the study findings.

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Appendix I: Data Collection Sheet

Measurement unit	2017	2018	2019	2020	2021
Net income					
Total assets					
Debts					
EBIT					
Asset utilization ratio					
Current assets					
Current liabilities					
Interest expense					

Appendix II: Listed Firms in the Manufacturing at the NSE

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

Source: Nairobi Securities Exchange

