ALTERNATIVE FINANCING AND FINANCIAL PERFORMANCE OF
MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE
KENYA

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REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER IN BUSINESS
ADMINISTRATION (FINANCE) OF KENYATTA UNIVERSITY

NOVEMBER 2021
DECLARATION

This research project is my original work and has not been submitted for a degree in any other University.

Signed: ……………………………………. Date: ………………………………..

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

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DEDICATION

To my lovely daughters Charlene and Crystal for being such an inspiration to me
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My sincere gratitude to God Almighty for His grace, blessings and wisdom. My appreciation and gratitude goes to my ever-supportive supervisor Dr Eddie Simiyu, who was always ready to provide his guidance and encouragement. You constructively critiqued my work and gave me timely and candid feedback.

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**ABBREVIATIONS AND ACRONYMS**

**EBIDTA:** Earnings before interest depreciation tax and amortisation

**EPS:** Earnings per share

**GDP:** Gross Domestic Product

**IPO:** Initial Public Offer

**MVA:** Market Value Added

**NACOSTI:** National Commission of Science Technology and Innovation

**NIM:** Net Interest Margin

**NSE:** Nairobi Securities Exchange

**ROA:** Return on Asset

**ROE:** Return on Equity

**SACCO:** Savings and Credit Cooperative Organization

**USA:** United States of America
OPERATIONAL DEFINITION OF TERMS

**Alternative Finance:** This refers to any source of finance other than the traditional, equity, debentures, corporate bonds, treasury bills and securities. They include financing sources such as lease financing, lines of credit, asset finance among others.

**Finance Lease:** This is a lease contract done for a long term that is not cancellable. The lessor transfers all the gains and risks that may arise from owning of the asset.

**Financial performance:** This is the profitability as well as the liquidity of a firm. It is measured by different ratios as well as absolute figures. This study will concentrate on the Return on Assets (ROA). ROA refers to the ratio obtained from profit after tax divided by the Total Assets.

**Firm Size:** This represents the total holding of the firm based on the valuation of their assets. This was measured by the log of the total assets of the listed firms.

**Lease:** A lease is a contract drawn between the asset owner (also called a lessor) and the asset user (also called a lessee). The lease contract allows the lessee to have asset use rights for a period of time agreed on and for a consideration called lease rental. Examples are operating lease and finance lease.
Lines of Credit or Credit Lines: This is an alternative financing option whereby the bank or financial institution provides a company with a credit facility to be drawn on demand. Only the amount of credit drawn by the company is charged interest.

Operating Lease: This is a short-term cancellable lease. The lessor retains all the benefits and risks that accrue there from the ownership of the asset.

Total Assets: This represents the total amount of the value of the assets belonging to the listed entity.
ABSTRACT

Financial performance of listed companies has, in the recent past been declining as characterised by dwindling profitability. Total ROA for the 13 firms under study decreased from 1.33 in 2013 to 0.68 in 2014 and then increased to 1.05 in 2015 before falling again to 1.02 then 0.30 in 2016 and 2017 respectively. Six out of the 13 manufacturing firms listed in the NSE issued profit warnings in the period 2018 to 2019. As such, investors were no longer attracted to shares and corporate bonds listed in the bourse because of the low returns. Additionally, there was a lot of defaults in the corporate bonds in the recent past. This played a major role in the increased adoption of alternative sources of financing by firms. The main study objective was establishing the influence of alternative finance on the financial returns among manufacturing firms listed at the NSE. Specifically, the study sought to determine the impact of operating lease, lines of credit and finance lease on financial returns among listed firms in the manufacturing segment. The research also sought to establish the firm size moderating effect on the relationship between alternative financing and the financial returns of the firms. Key theories used in the study were Modigliani and Miller theorem, Trade Off theory, Pecking Order theory, Liquidity Preference theory and Economies of Scale theory. A descriptive research design was adopted. Secondary data extracted from annual reports and financial statements, was used. The study population was picked through a census of the 13 firms listed under the NSE manufacturing and allied and construction and allied segments. The study utilized the descriptive research design. Descriptive data analysis was used i.e., mean, mode, medium and standard deviation. Inferential statistics were analysed through Pearson’s correlations as well as Panel Regression Model for 13 listed manufacturing firms for the period between the year 2015 and 2019 using Eviews 11. The research results showed there was an insignificant correlation between finance lease, operating lease, credit lines, firm size and the financial returns among the firms. The study applied random panel regression and results showed that 17.29% of the changes in financial outcomes could be explained by alternative financing. The moderation tests indicated a positive significant and moderating effect of firm size on the financial performance of the manufacturing firms. The study concluded that alternative financing improved returns among listed manufacturing firms in Kenya. The research concluded that finance leasing reduced income significantly, while operating leasing and credit line had insignificant effect. Firm size and alternative financing were positively and significantly related with firm income generation capacity. The study revealed that firm size did not have a significant influence on the financial performance. It was recommended that improving financing structures, regulatory policies and guidelines to support the performance of manufacturing firms is vital. The firms also should regularly review their financing options to ensure selected options improve financial performance. Finally manufacturing firms should review their internal debt policies to improve their profit-generation capacity.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financial performance globally has gradually improved over the years since the financial crisis of 2008/2009. Globally, financial performance was relatively good in 2019, whereby 80 per cent of the big 10 and 86 per cent of big 11-25 firms delivered a fee income growth of above 5 per cent (PWC, 2019). Though there was a positive global trend, there were variations in regional performance attributed to various factors resulting from the changing economic and political landscape, for instance, high inflation rates in Nigeria, the interest rate cap imposed in Kenya and Kenya’s election cycles have had significant consequences on the value of gross loan portfolio in Africa (FinDev, 2019). While the global financial performance has been positive in the past years after the global financial crisis, the Kenyan financial performance has been on a downward trend. 17 companies of the 63 listed firms on the NSE issued profit warnings in 2018 (CMA and NSE, 2019).

According to the United Nations Industrial Development Organization (UNIDO’s) World Manufacturing Statistics for Quarter II 2020, global manufacturing output dropped by 11.2% and 1.1% between the second and third quarter of 2020 due to the containment measures that were necessitated by the COVID 19 pandemic. China, which is the world’s largest manufacturer, was also hit hard by the pandemic in the first quarter of 2020 when its manufacturing output declined by 13.9 per cent, but it bounced back in the second quarter and increased by 2.8 per cent in a year-over-year comparison (United Nations Industrial Development Organization, 2020). Regionally, the African continent witnessed a contraction of 12.4 per cent in the year 2020 with the third quarter alone facing a drop of 4 per cent in the operational performance of the sector (African Development Bank Group, 2020). In Kenya,
the COVID-19 pandemic and other existing economic challenges contributed to a drop in the output of the manufacturing industry by 3.2 per cent. Further, the value-added within the sector contracted to Ksh.183 billion in 2020 Q3 from Ksh.191 billion in 2020 Q1 (Kenya National Bureau of Statistics, 2020).

According to NSE (2018), there was a steady decline of profitability for the period 2016 to 2018 for companies listed in the bourse apart from the energy and petroleum category. Six out of the 13 manufacturing firms listed issued profit warnings in the period 2018 to 2019. The firms are Unga Group, Bamburi Cement Ltd, East African Portland, Crown Paints, Carbacid Investments Ltd and BOC Kenya. Total ROA for the 13 firms under study decreased from 1.33 in 2013 to 0.68 in 2014 and then increased to 1.05 in 2015 before falling again to 1.02 then 0.30 in 2016 and 2017 respectively.

NSE (2019) data shows that there has been a drought in IPOs. This has been attributed to the steady decline of the NSE share index, slow privatisation of publicly owned firms, and slow growth of start-ups. Additionally, Corporate Bonds listed at the NSE have declined and are characterised by defaults making corporate bonds an unattractive source of finance and investors shy away from them (CMA and NSE, 2019).

NSE listed firms employed lease financing because Kenyan banks charge high and fluctuating interest rates, the tax implications and also because lease financing conserves cash (Kibet et al., 2013). The stringent requirements for accessing financing from bank or even through equity include among others, audited financial statements, guarantors, collateral, and or a stable income. Alternative sources of finance include leasing, asset finance, credit lines as well as invoice factoring. The changes in the bank industry have led to an increased demand for alternatives sources other than loans from banks so as to finance corporate real estate (Olsson, 2015).
From the above it can be seen that traditional sources of finance have several disadvantages and limitations such as shrinking pool of investors willing to invest through equity or corporate bonds, high interest rates and stringent requirements before a firm qualifies to access debt financing, dilution of control in the case of equity finance (Kajirwa & Ikapel, 2016). Alternative finance, being the sources of financing alternative to the traditional equity, bonds and debentures on the other hand has become more popular (Ngeno, 2019). Firms are motivated to go for alternative financing, in their quest to maintain the shareholders’ control and also reduce gearing that would come with the traditional financing sources. Firms can get finance from banks or even from sources other than banks (Salam, 2013).

Several alternative methods such as using credit lines, venture capitalists, or even online lending are now available for exploitation (Obiora and Csordás, 2017). Alternative financing can be beneficial in financing working capital shortfall more effectively than banks. In alternative financing, business cash flow is the main factor that is considered (Kibunja & Fatoki, 2020). No business plan is required and the funds from the finance can be used for various purposes (Kelly, Khayum, & Price, 2013). Many firms prefer financing their day-to-day operations using working capital loans. It is easy and a straightforward way to get funding faster without the need to wait for weeks for a decision (Ngeno, 2019).

Whereas traditional bank loans, are characterised by having monthly instalments and longer terms, working capital loans on the other hand involve regular mini payments and are short term in nature (Muia, 2015). The selection of the method of financing is more about the signals that the firm would like to send and is actually sending. The selection decision additionally will affect the capital structure and company value. There must be diversification in the total financing of the firm. (Olsson, 2015).
Onaolapo and Odeyemi (2012) investigated cocoa processing firms in Lagos to determine how different sources of finance impact their performance. It was determined that availability of sources of finances were strongly related to performance. Rafiq (2012) looked into the causal effect of financial decisions and financial outcomes among Jordanian SMEs. Financing decisions were noted to have a significant effect on profitability of the firms. Kenduiwo (2014) analysed the effect of alternative financing and financial performance. From the findings, there is a linear relationship as far as alternative source of finance and financial performance are concerned representing correlation of 0.762. Muriithi (2014) on analysing the effect of financing sources on profitability concluded that the studied sources of finance did not have a significant impact of profits generated.

1.1.1 Financial Performance

Alkhazaleh and Al-Dwiry (2018) define financial performance as the the extent to which entities achieve goals and objectives, and is manifested in profitability, return on assets (ROA) and return in equity (ROE) (Busch, Bauer, & Orlitzky, 2015). It represents the cover of claims by debtors against the firm’s assets. In the study “How Measuring Financial Performance” Fatihudin et al (2018), concluded that liquidity ratio, solvency, efficiency in generating returns, and leverage are among the main measures of financial performance. They further concluded that fundamental and technical analysis can also be used to gauge the firm financials.

Ganga et al (2015), identified financial ratio analysis and trend analysis as means of measuring financial performance in their study on evaluation of financial performance. Carton and Hofer (2010) in their study of organisation performance, recognised that financial performance should be measured using profitability ratios, liquidity ratios, growth ratios, cash flow, cost of capital, survival score, economic value, and market value ratio. The financial performance of companies is dynamic as profits fluctuate year in year out and from firm to firm. It is pertinent to both the management and the investors in fostering the future success of a firm (Levine &
Zervos, 2009). Alkhazaleh and Al-Dwiry (2018) also identify price-earnings ratio (P/E), economic value added (EVA), and market value added (MVA) as measures of financial performance.

Jim (2014) alluded that the performance of financial institutions can be measured using several measures which include employee growth, profit growth, asset growth or any alternative type of measure that management or an investor deems as an important determinant of future firm’s success. According to Glova and Gavurova (2012), ROA, ROE, NIM, Net profit, share prices and profit margins are among the main indicators of a firm’s health. This study adopted returns on assets (ROA) to be the indicator of the financial performance of NSE listed manufacturing firms. ROA is preferred since it captures the ratio between Net income and total assets (debt plus equity).

1.1.2 Alternative Financing

Alternative financing is the financing source that is alternative to the conventional financing of debt, equity and corporate bonds. In Kenya, this includes operating leasing, asset finance, finance lease, credit lines among others.

1.1.2.1 Operating lease

According to Pandey (2015) a lease refers to a contract entered between a particular asset owner (called the lessee) and the one who uses the asset (called the lessee). The lease contract gives the lessee an asset use right for a period of time agreed upon so as to get a certain consideration (referred to as lease rental). Short term cancellable leases are called operating leases. Operating lease involves a lessee giving a lessor an asset to be used for a specified timeline and return it to the lessee after termination of the contract (Obodai, 2019). The lessor does not transfer the risk and rewards associated with the leased asset. The lessor remains the owner and has to incur the cost of repairs, risk of obsolescence and maintenance of the asset while the lessee only pays the periodic rentals (Pandey, 2015).
Operating lease financing was shown to have no significant correlation with ROA in the study of the effect of lease finance on the Nigerian oil and gas companies’ financial performance by Sabo and Bello (2015). In an assessment into the impact of operating lease on returns of sugar manufacturing state-owned firms in Kenya, Kajirwa and Ikapel (2016) concluded that operating lease affected negatively their financial performance of the firms studied. Munene (2014) assessed the impact of lease financing on the monetary performance of registered firms with the conclusion showing that financing using leases has an insignificant impact on firm returns.

Kaur and Ohri (2016) studied lease structure to determine how it impacts firm returns. It was concluded that the current ratio was higher in operating lease than financial lease meaning that firms using operating lease had good short term financial strength. Orabi (2014) investigated the relationship between leasing decisions and the monetary performance of industrial companies. It was found that lease as a source of finance, increases profitability of companies, though raises corporate risk accordingly.

1.1.2.2 Finance Lease
A lease is a contract between an asset owner (lesser) and an asset user (lessee). The lease contract gives the lessee the right to use an asset for an agreed period in exchange of a consideration called lease rental. Long term non-cancellable leases are called finance leases. Finance leases amortise the cost of the asset throughout the term of the lease contract (Pandey, 2015). Finance lease improved ROA among Nigerian oil and gas companies (Sabo & Bello, 2015).

Wataka (2018) analysed the impact of asset financing loans on the performance, financially, of Nakuru real estate firms in Kenya and found that increasing the uptake of private asset financing loans was likely to result in increased performance on real estate investment firms only to a small extent. The conclusion was that a greater proportion of performance, financially
speaking, of the stated firms was attributable to the private asset financing loans, whereby the assets to loans ratio was found to be the most important variable.

Wafula et al (2016) found a positive relationship between finance leasing and returns reported by the Trans Nzoia County Government. Finance lease positively influenced ROA. Munene (2014) did research on the relationship between lease as a source of financing and the financial outcomes of NSE-listed firms. The study concluded that lease finance has no effect on the financial performance of listed firms in Kenya. Similarly, Obiero, (2016) demonstrated that financing using lease and liquidity had positive impact on ROA among the NSE listed companies. Orabi (2014) investigated the relation between leasing decisions on the performance of industrial firms. It was found that lease financing increased the companies’ profitability though it increased accordingly, the corporate risk.

1.1.2.3 Credit Lines
This is an alternative financing option whereby the bank or financial institution provides a company with a credit facility to be drawn on demand. Whenever the customer requires funds, they can withdraw from this account and only the amount of credit drawn by the company is charged interest (Sufi, 2007). The credit line is set up the bank at a fee and a periodic fee is also charged to keep the line of credit open. The company can draw down the credit limit in the form of either secured, unsecured or revolving fund. Secured credit line is provided against some collateral such as inventory or asset. The revolving line of credit means that when an amount is drawn from the credit facility and repaid, it goes back to the facility and can be utilised in future by being drawn as needed (Aragon et al, 2020).

Sufi (2007) did an empirical study on bank credit lines in corporate finance and the findings suggest that bank credit lines give some flexibility as far as financing is concerned. The unused credit line value and cash is much greater for firms in the lower deciles of profitability as they hold more cash. Firms with no access to credit lines must hold very high cash balances in lieu
of the credit line facility. Unused credit lines are more efficient than cash in the protection or cover against future shocks in income (Sufi, 2007).

In other studies, Acharya et al (2014) show that bank health shocks are risky especially if they go together with liquidity shortage, such as the recent financial crisis, which complicates the banks and firms ‘capacity to raise funding. Credit lines access restriction decisions resulting from financial wellness have key implications on firm’s capital structure, hiring, investment, and overall performance (Acharya et al, 2014). Aragon et al (2020), in their study on credit lines in microcredit in India found that a line of credit facility led to a 7% increase in profits as compared to any standard microcredit. They found that there was a rise in profitability mainly caused by the lines of credit leading to more flexible borrowing as well as flexible repayments that allow sellers to invest more in goods that are of high return. Firms with higher debt and unutilised credit line showed far better performance operationally in the year prior to the issue (Aragon et al., 2020).

Operating performance changes between pre- and post - issue year period is conversely correlated to the amount of the credit line unused. This was a finding by a study carried out by Liu and Yang (2011) to examine the effect of private debt on one hand and unutilised credit lines on the other hand on the seasoned equity offerings in the US.

1.1.2.4 Firm Size
Firm characteristics are usually associated with firm financial performance (Doğan, 2013). These include firm size, capital firm age liquidity, and asset tangibility (Yazdanfar D., 2013). The size of the firm is described by the accounting value of the bank's total assets. Total assets will be incorporated as a measure of the listed firm size (Hadad, 2013). Liñares-Zegarra and Wilson (2018) findings further indicate that the age of firm and firm size have a positive influence on their growth. Ng’ang’a (2016) revealed that the size of the bank, the liquidity, and capital adequacy were insignificant predictors of bank efficiency. The current study
examined the moderating effect of firm size on the interaction between alternative financing and financial results of listed manufacturing entities in Kenya.

1.1.3 Manufacturing Firms in Kenya

The NSE is the main exchange in Kenya for trading securities. It was established in 1954 as an overseas market for securities. Kenya being a colony under Britain then, the NSE was permitted to operate by the London Stock Exchange. An African Securities Exchanges Association member, the NSE is the fourth largest securities exchange in Africa, in terms of volumes of trading and the fifth in terms of capitalization of market as a percentage of GDP (Iraya and Musyoki, 2013). There are eleven sectors in the Nairobi Securities Exchange namely; automobile and accessories, agricultural, growth enterprise market, commercial and services, banking, energy & petroleum, insurance, construction & allied, manufacturing & allied, investment, as well as telecommunication & technology segment (NSE, 2016).

Out of these, banking, insurance and investment segments represent the financial firms whose major operations is either to lend to the public or offer investment vehicles to the public. Analysing these firms would distort the results since they are the market makers for alternative sources of finance. The rest of the market segments are the market takers of the alternative sources of finance and this where this study focused on, specifically on the two segments of manufacturing and allied and allied sectors since the firms in these two segments fall within the manufacturing sector of the economy and they represent a good number of firms of the non-financial firms. Manufacturing is one of the Big 4 Agenda of the Kenyan government and hence the reason for concentrating on manufacturing firms. The Big 4 agenda which also include universal health coverage, food security and affordable housing, initially planned to achieve 8.3 per cent GDP growth for Kenya by the year 2022. This was later revised to 15 per cent GDP growth by the year 2022. The Big 4 Agenda seeks to increase the GDP contribution of the (manufacturing) sector to 15 per cent by the year 2022 (Kenya Vision 2030, 2018). Currently,
the manufacturing sector contributes about 9.2 per cent to the GDP. Through the Big 4 agenda, the Kenyan government seeks to enhance manufacturing to increase the percentage contribution of manufacturing to the GDP to 20 per cent of GDP by the year 2022 (KNBS, 2019).

The current study examined the 13 firms listed under the manufacturing and allied and the construction and allied segments of the NSE as per the CMA roll of 2020. These firms were chosen due to their importance in leading the country towards infrastructural development which is one of the sustainable development goals (SDG) being pursued by the Kenyan government.

1.2 Statement of the Problem

Financial performance for listed companies has deteriorated in the past years. According to data from the NSE, total ROA for the 13 firms under study decreased from 1.33 in 2013 to 0.68 in 2014 and then increased to 1.05 in 2015 before falling again to 1.02 then 0.30 in 2016 and 2017 respectively.

In the recent past years there was a rise in the number of companies that issued profit warnings. A profit warning is a warning that the investors should expect a decline of at least 25 per cent in earnings compared to the previous year. It may also signal that the company may even make a loss. 17 companies of the 63 listed firms on the NSE issued profit warnings (CMA and NSE, 2019). Six out of the 13 manufacturing firms listed issued profit warnings in the period 2018 to 2019. The firms are Unga Group, Bamburi Cement Ltd, East African Portland, Crown Paints Kenya PLC, Carbacid Investments Ltd and BOC Kenya. (CMA and NSE, 2019).

According to NSE (2019), there has been a drought in IPOs. The last time NSE had a major IPO offer was in 2008 when Safaricom went public. A couple of not so major IPOs including the bourse’ own IPO in 2014 were later done. This has been attributed to the sharp decrease of
the securities exchange performance as shown by a fall in the NSE 20 share index from 5113 in 2014 to 2654 in 2019 (NSE 2019), slow pace of privatisation of parastatals and slow growth of start-ups. According to NSE (2020) the prices of blue-chip companies declined over the recent years thereby suppressing investor interest in the bourse. Lack of IPOs meant more firms resorted into bank loans to raise funds for expansion and this rise in loan demand played a big role in rising interest rates in the period prior to the interest capping in 2016.

Corporate bonds on the other hand have been characterised by defaults and most firms are reluctant to go the corporate bond way to raise money for fear of not hitting the targeted finance. These defaults led to a decrease in investor demand for corporate bond issuance (NSE and CMA, 2018). The default was largely due to the fact that the bonds had underperformed among other reasons (NSE, 2020). By the end of August 2019, Kenya had 20 listed corporate bonds with a value of Kes47.2Billion compared to 28 listings (Kes.72.28Billion) in 2014. The last listing was in April 2017, a clear indication that corporate bond is drastically becoming an unpopular mode of financing by listed companies (NSE, 2014 to 2020). With this backdrop, firms and especially the listed firms, have been forced to look for alternative financing options.

Obiora and Csordás (2017) in the paper that analysed alternative against traditional financing, allude to the fact that alternative financing has benefits such as ease of access, the efficiency, and even marketability of alternative financing sources. The research was conducted in China and it did not study the financial benefits of alternative financing. Olsson (2015) in the study of alternative financing options of corporate real estate tried to compare the costs of alternatives compared to bank lending in Stockholm, Sweden. The study was done on non-financial firms that intended to get capital to finance Sweden corporate real estate. However, the research did not explain the effect of alternative financing on returns.
Mahdi et al. (2014) found a positive effect of firm size on profitability of firms listed in Tehran Stock Exchange. The study did not however concentrate on manufacturing companies which are equipment intensive. Muriithi (2014) assessed financing sources and firm performance and noted that personal finance, bank loan, leasing and micro-finance as sources have no significant relationship with financial performance since most of these amounts were used to finance other business operations. Therefore, the study recommended the need for use of combined sources of financing. The study was conducted on the mid-sized top-100 companies in Kenya and not on manufacturing firms listed in the bourse.

Kenduiwo (2014) in the analysis of the influence of alternative finance sources and profitability of Nairobi-based SMEs concluded and reported a high positive correlation between alternative finance sources and profitability. However, the study failed to provide quantitative statistics regarding how each alternative financing option impacts income generation among manufacturing firms listed at the NSE.

The current study therefore was to fill in the previous study gaps shown above. The study sought to determine the relationship between alternative financing and ROA of listed manufacturing firms in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The main objective of the project was to establish the influence of alternative financing on the financial performance of manufacturing firms listed at Nairobi Securities Exchange.

1.3.2 Specific Objective

i. To examine the effect of operating lease on the financial performance of manufacturing firms listed at Nairobi Securities Exchange.
ii. To examine the effect of finance lease on the financial performance of manufacturing listed at Nairobi Securities Exchange.

iii. To examine the effect of credit lines on the financial performance of manufacturing firms listed at Nairobi Securities Exchange.

iv. To determine the moderating effect of firm size on the relationship between alternative financing and financial performance of NSE listed manufacturing firms

1.4 Research Hypotheses

The study sought to test the following hypotheses at 95% confidence level;

$H_{01}: \text{Operating lease has no influence on the financial performance of manufacturing firms listed at Nairobi Securities Exchange}$

$H_{02}: \text{Finance lease does not affect the financial performance of NSE listed manufacturing}$

$H_{03}: \text{Credit lines financing has no effect on the financial performance of manufacturing firms listed at Nairobi Securities Exchange}$

$H_{04}: \text{Firm size has no moderating effect on the relationship between alternative financing and financial performance of manufacturing firms listed at Nairobi Securities Exchange}$

1.5 Significance of the Study

The results of this research were of immense significance to firms in Kenya as they seek to diversify the available financing options within the country. The results were integral to enhancing practice within listed firms in undertaking their financing options, working capital management as well as managing their gearing while ensuring that the shareholders control is not so much diluted.

The results of the study were of value to policy makers by enhancing policy formulation within the regulators in the Kenyan financial markets; notably the NSE, CMA, Central Bank and the
Kenyan government in designing policies that will stimulate the uptake of alternative financing within the bourse as well as in achieving the Big 4 agenda.

The study provided insights to the manufacturing industry about alternative sources of financing and their influence on financial performance. Manufacturing firms were able to make informed decisions on sources of finance.

The study findings were important to future researchers and academicians seeking to expand their knowledge on the performance of manufacturing listed firms and the alternative financing market in Kenya.

1.6 Scope of the study

This study sought to examine how alternative sources of finance impact the financial performance of 13 Manufacturing companies listed in the NSE under manufacturing and allied and construction and allied segments. The study covered a time scope period from 2015 to 2019 whereby research data for this period was analysed and informed the basis of the findings and conclusions of this study. The period was selected since it was the immediate past five years preceding the year of doing this study and it was the period immediately after the biggest dip in total ROA for the 13 manufacturing firms under study. Further, lack of complete financial reporting by the time the study was considered led to the exclusion of the financial results of 2020. Also, with the negative impact of the pandemic, the inclusion of the financial reports of 2020 may have negatively impacted the study by including outlier observations when most firms had negative financial returns. The independent variables included the three selected alternative sources of finance namely: operating lease, credit lines and finance lease with the dependent variable was the financial performance measure; Return on Assets (ROA).
1.7 Limitations and delimitations of the study

The research was limited to an examination of the alternative financing and financial performance for the period 2015-2019. This limited the number of observations that were included in the study hence further examination can allow for a longer time period. The study was only limited to assessment of the financial outcome using only a profitability metric (ROA), future studies can consider the utilization of more proxies in the analysis of the financial performance of the firms. The study was further limited only to the listed manufacturing firms and did not consider other larger manufacturing firms or institutions within the stock exchange which may hinder the applicability of the study findings.

1.8 Organisation of the study

Chapter one introduced the study and covered the study background of the study. It covered the various alternative financing sources as well as financial performance measurements as the context of the study. The NSE and the Big 4 agenda objectives with regard to manufacturing in Kenya was discussed in this chapter. Chapter two was a review of the literature relating to alternative finance sources and their impact on financial performance. Chapter three focused on research methodology and research design, the conceptual framework as well as empirical modelling. Sample composition, population, data collection procedures and instruments including data analysis and presentation is discussed within this chapter three. The fourth chapter focussed on the data analysis and presentation of the study findings. The fifth chapter summarized the study results, presented the conclusions, recommendations and suggestions for future research work.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This section presents the theoretical and empirical literature review. Research gaps and conceptual framework are also covered.

2.2 Theoretical Framework
The research was premised on five theories/model of Modigliani-Miller theorem, Trade-off theory, Pecking Order theory, Liquidity Preference theory and Economies of Scale theory.

2.2.1 Modigliani-Miller Theorem
This theory on capital structure that was developed by Modigliani and Miller. It goes to show how the capital structure is irrelevant to the valuation of a firm. Together with the original Modigliani and Miller paper, other crucial contributions are papers such as papers Hirshleifer (1966) and Stiglitz (1969). The theory stated that the firm’s prices are usually not determined by the choice of capital structure or financing decisions of the firm (Board, 2019). Muriithi (2014) intimated in his study on alternative sources of finance in 2014. There are two categories of the arguments that capital structure is irrelevant. The classic arbitrage-based irrelevance that argues that investor’s arbitrage activities protect the firm’s value form being dependent of its leverage (Murray and Vidhana 2003). The Modigliani-Miller’s proposition of irrelevance complicated in terms of testing it. With both debt and value of firm being influenced by internal and other drivers such as collateral, profits and opportunities for growth, it is difficult to test the theory. (Muriithi, 2014).

Olsson (2015) in his study intimates that Modigliani and Miller’s arguments are applicable in choosing whether to own or to lease corporate real estate. In reality no perfect market exists. Firm’s value is affected by the firm’s capital structure (Olsson, 2015). This theory therefore supports the dependent variable, ROA, in that the choice of equity or debt has no significant impact on the firm’s value. A firm would, therefore be indifferent as to whether to finance
through equity or through any other type of financing since it has no effect on the overall firm’s competitive positioning.

2.2.2 Trade-off Theory
The trade-off theory was introduced by Kraus and Litzenberger (1973) who developed it from the debate on the Modigliani and Miller theorem. Kraus and Litzenberger (1973) argue in the theory that optimal leverage shows a trade-off between the debt tax benefits and bankruptcy costs. The target is established by the balance between debt tax shields and bankruptcy costs (Murray and Vidhan, 2003). In the study, Muriithi (2014) argued that there is a linear objective function of a firm meaning that there is zero offsetting cost of debt. The study intimated further that an offsetting cost of debt (bankruptcy) is required. A higher tax rate means that the cost of equity is lower.

Olsson (2015) in the study on alternative financing options for real estate, concluded that the greater the debt: equity ratio, the higher the cost of equity gets, tax rate being constant. To finance with leverage requires a higher rate of return than to finance totally unleveraged (Olsson, 2015). The optimal capital structure is dependent on achieving a balance between the tax benefits and costs of debt. Firms constantly substitute equity with debt or debt with equity up to when the firm’s value firm is maximized (Ghazouani, 2013). This was observed in the study of capital structure using the trade-off theory. A Tunisian firm was the object under review.

In the study on the impact of alternative finance sources on returns among SMEs in Nairobi, Kenduiwo (2014) recognises that the trade-off theory alludes that there is an advantage of debt finance which is the debt tax benefits and that there is a debt financing cost, the financial distress costs of debt and the bankruptcy costs of debt. The incremental marginal debt benefit drops as debt rises, whereas the marginal cost rises. Hence a firm seeking to optimize its total
value evaluates this trade-off before determining whether to adopt debt and/or equity financing (Kenduiwo 2014).

According to Myers (1984) who introduced the Trade-off Theory (TOT henceforth) that brought a new different look at capital structure, firms compare both the costs and benefits of using debt. The benefits of using debt include the tax-shields of interest on accrued on debt while the costs are the agency costs as well the bankruptcy costs. The tradeoff theory was relevant in the choice of alternative sources of finance especially the independent variables (such as lease financing, asset financing, credit lines) of this study. This is where firms take advantage of tax benefit while also being keen on the bankruptcy risk. Instead of aquirmg assets through equity financing, a firm would choose operating lease or finance lease or even asset financing, whereby the firm takes advantage of the tax benefits on the periodic repayments so that the firm can ultimately arrive at a tradeoff between tax benefit and bankruptcy.

2.2.3 Pecking Order Theory
This is a capital structure theory that was first developed by Donaldson in 1961. It was modified and made popular by Myers and Majluf in 1984. As such, managers go by a hierarchy in selecting financing sources per the theory. The hierarchy prioritises internal financing, before considering external sources of finance starting with debt then eventually equity in that order. Equity finance is issued as a last resort (Borad, 2019). The pecking order theory argues that firms prefer internal sources of finance to external sources of finances. This is mainly because internal sources of finance are less prone to costs of information asymmetry (resulting from managers knowing more than outsiders do) unlike the external sources of finance (Invest Europe, 2016). Hence, firms opt for retained earnings first to finance their operations. If the retained earnings were not enough, then firms would borrow to bridge the deficit through borrowing (Gassler, Pointner, & Ritzberger-Grünwald, 2018).
For example, Watson and Wilson (2002) intimate that an owner(s)/manager chooses a personal source of finance then a short-term debt, longer-term borrowing and finally equity finance in that order of preference (Muriithi, 2014). In a study on alternative funding choices of corporate real estate, Olsson (2015) applies pecking order theory and states that the firm’s management knows more than lenders. Thus, if a firm is in need of financing from external sources and is using the pecking order proposition, it chooses debt funding over the issue of equity attributed to the reduced information cost of issuing debt (Murray & Vidhan, 2003). In a study private equity and venture capital in Europe, the pecking order is simple in that the firm’s only financing selection is between debt and equity (Caselli & Negri, 2018).

Further, the pecking order theory is central to this study since its’ basic principle is that financing decisions are made in such a way as to cause the least difficulty to management. Any organization has a specific order of preferences which it follows in making financing decisions (Chen & Chen, 2011). The pecking order theory is all about financing the companies by an order from safer to riskier; it means it gives an advantage to internal financing compared to external funding (Sheikh, Ahmed, Iqbal, & Masood, 2012).

As such it was vital to this study in understanding alternative financing adoption by the listed manufacturing firms. Further, the pecking order theory supports the independent variables such as operating lease finance whereby the choice of sources of finances is influenced by the fact that firms tend to select sources of finance that minimize the cost of capital. When a firm exhausts their resources, they might opt to take up operating lease financing which is another cheaper way of financing as no upfront capital outlay is required. The theory also supports credit lines as a financing since it provides some flexibility and only the amount drawn is subjected to interest charge.
2.2.4 Liquidity Preference Theory

Liquidity preference theory by Keynes (1936) demonstrates that investors prefer to hold cash, which is less risky, and would demand a premium return in investing the cash in securities with longer maturity compared to shorter maturity period securities (Culham, 2020). The risk and return element are demonstrated in this theory hence giving foundation and basis of charging interest on credit lending (Bertocco & Kalajzic, 2014). The two key objectives of decisions regarding financing are solvency and profitability. Solvency refers to firm’s readiness and capability to continuously honour obligations as they mature. This implies that a liquid firm has low insolvency risk and will rarely have cash shortage. However, maintaining sound liquidity position has a cost associated with it (Kenduiwo, 2014).

The cost of cash outage includes not being able to pay debts as they mature. This may have serious effects such as among others the company winding up if the firm continuously default on bills as they fall due. On the other hand, if firms hold too big cash balances, then, this cash is an idle asset, leading to an opportunity cost to the firm as this idle cash could have been invested to generate further returns to the firm (Kumar, 2020). A different approach of analysing the trade-off between risk and return is in form of the cost of maintaining a certain value of current assets. Two costs involved are liquidity and illiquidity costs.

Where the firm’s current assets values relatively too high hence excess liquidity, the lower the return on assets (ROA) since finances are held in idle cash earning zero returns. Similarly, high debtors’ levels reduce profitability (Kenduiwo, 2014). Firms with no access to credit lines must hold very high cash balances in lieu of the credit line facility. Unused credit lines are more efficient than cash in the protection or cover against future shocks in income (Sufi, 2007).

This theory was central to the understanding of credit line financing and financial leasing adopted by these firms.
2.2.5 Economies of Scale Theory
Adam Smith in his first book of Wealth of Nations (1776), 200 years ago formulated the basics of this theory by asserting that division of labour could significantly improve production capacity of different firms. The theory of economies of scale argues that increasing the firm size will enable it tap on the economies of scale thereby gain higher profitability. It postulates that larger companies have a higher competitive advantage since they get numerous discounts on large purchases, get favourable lending terms, have a high spread of fixed costs across numerous units and have more established risk assessment measures.

According to Ochieng (2014), economies of scale may occur for organizational reasons, financial reasons or technical reasons, implying that this concept recognizes firm size as a predictor of organizational outcomes. This theory helped the study identify the moderating impact on financial performance that the firm size has. This theory supported the moderating variable, firm size.

2.3 Empirical Literature
Empirical literature attempts to explain the relationship between the current study and the prior research statistics.

2.3.1 Operating lease and Financial Performance
Bello, et al (2016) investigated the relationship of lease financing and profitability among companies in Nigeria’s gas and oil industry. OLS regression was adopted in analysis of the collected data. Findings revealed that lease financing improves ROA among Nigerian oil and Gas Company. The study evidence showed a positive correlation between lease financing and ROA. On assessing the relationship between lease financing and profitability of NSE listed firms, Munene (2014) concluded that lease financing has no impact on financial performance.

Kajirwa and Ikapel (2016) investigated state-owned sugar manufacturing firms in Kenya to determine the impact of operating lease and financial performance, concluding that operating lease has a negative impact on the firms’ financials. Kaur and Ohri (2016) investigated how
financial lease impacts firm returns. It was concluded that the current ratio was higher in operating lease than financial lease meaning that firms using operating lease had good short term financial strength. There is contradictory empirical evidence concerning the effect of operating lease and financial performance, hence the need to research further.

Kelly, Khayum and Price (2013) assessed the impact of operational lease in terms of equipment leasing on performance of community banks. Operational leasing was determined to reduce costs and improve operational performance of community banks. Oko and Nnabuko (2013) investigated Nigerian manufacturing companies to determine the impact of equipment leasing of business outcomes. Firms that leased equipment were found to have higher profit ratios, increased customer satisfaction, and improved efficiency.

Devos, Devos, Li and Tsang (2021) collected data from 334 Real Estate Investment Trust (REIT) firms that had included operating leases as a means of generating income for other investment opportunities. The time period for data collection was between 1993 and 2018. Tobin’s Q was utilized. The results showed that strategical application of operational leases significantly impacted innovation and resulted in the firms having more opportunities for growth. They also reported increased leverage, reduced operational costs and high risk. However, REITS which depended significantly on operating leases reported lower shareholder returns. In this case, the higher the level of operating lease the riskier the investments since the firms cannot source funds internally.

Leasing is a favourable source of financing for companies since it eliminates the red tape required by traditional sources of finance, and solves requirements on non-current tangible assets (Sadaf et. al., 2019). Maglio, Rapone and Rey (2018) investigated operating lease reporting requirements and their impact on Italian firm returns. The study showed that including operating leases into balance sheets results in significant differences in the assets and
liability values. This, therefore, means that liquidity and profitability ratios will differ significantly. Kusano (2018) investigated the impact of operating leases on credit agencies’ ratings using evidence from Japanese companies. The study determined that accounting reporting requirements determine the level of disclosure of operating leases. Little or no oversight on reporting meant no impact of firms’ credit rating. Hence, the researcher concluded that while there are significant relations between operating leases, financing leases and credit rating, are not significant. Operating leases become more risk-averse than financing risk with unreliable reporting requirements, therefore limiting credit firms’ ability to determine credit worthiness of lessees.

Munir, Kok, Teplova and Li (2017) investigated different CEO power thresholds to determine whether power dynamics influence financing policies of SMEs in China. Focussing on 297 listed firms, the researcher adopted the Caner and Hansen (2004) instrumental variable threshold regressions approach. The study determined that more powerful CEOs did not depend on debt financing and operating leases as sources of finances. However, past a certain power index, the likelihood of using debt financing increased significantly. This was attributed to the inability of less powerful CEOs to leverage on conventional means of acquiring finances such as banks.

Chukwu and Wadike (2018) sought to determine how lease arrangements impacted outcomes among Nigerian Breweries listed on the country’s stock exchange. The study analysed net assets per share and earnings per share to determine performance outcomes and sought to determine whether the nature of lease arrangements and frequency of use impacted the above. It was revealed that diversifying lease arrangements led to improved financial returns compared to firms that relied on a single source of lease arrangement. Recommendations were for companies to recognize and engage in appropriate lease arrangements. Laitinen (1991) also
determined that lease arrangements impact profitability ambiguously, with the nature of the lease agreement determining profit- or loss-making outcomes.

Kajirwa and Ikapel (2016) sought to determine the relationship between operating lease and profitability among Sugar Manufacturers in Kenya. A retrospective research design was applied on 4 sugar manufacturers and data was collected from the firms’ reports. Pearson product moment correlation and linear regressions were used in analysis. Operating lease arrangements were determined to reduce ROA. Bourjade, Huc and Muller-Vibes (2017) sought to determine the impact of aircraft leasing on profitability among airlines. It was shown that among airlines, leasing was more profitable to low-cost freighters as opposed to full cost transporters. This shows that within industries, operational leasing is a viable option for smaller firms which only incur these costs when completely necessary. Salam (2013) on assessing whether lease arrangements impacted ROA and ROE of SMEs determined that leasing companies reported higher returns and greater profitability. Orabi (2014) determined that increasing the proportion of operating lease resulted in a corresponding increase in ROA among manufacturers listed at the Amman Stock Exchange.

2.3.2 Finance Lease and Financial Performance
Orabi (2014) investigated the effect of leasing decisions on returns among industrial firms. It was found that financing using lease increased the profitability of firms, but raised the corporate risk accordingly. Bello et al (2016) investigated the influence of lease financing returns among firms in Nigeria’s gas and oil industry. Empirical studies showed a positive relationship between lease financing financial outcomes, noting that lease financing improved profitability ratios or the companies.

Wataka (2018) looked into real estate firms in Nakuru, Kenya in a bid to determine how asset financing loans impacts profit generation and found that increasing the uptake of private asset financing loans was likely to result in increased performance on real estate investment firms.
only to a small extent. It was concluded that a greater portion of financial performance of the studied firms is attributable to private asset financing debts. Obiero (2016) focussed on NSE-listed firms to assess how lease finance as a source of financing impacts returns, with findings indicating a positive relationship between lease financing and liquidity on ROA.

Wafula et al (2016) investigated financing sources and performance of the Trans Nzoia County Government. The analysis showed that finance lease had positive impact on ROA. These studies showed a positive relationship between the finance lease as source of finance, and financial performance. However, the study noted a need to assess how financing lease impacts on returns among Kenya’s manufacturing companies.

Sulaiman and Obisesan (2020) investigated Nigerian firms’ financial reporting to assess whether lease financing has an impact on firm profits. The researchers used panel regression analysis on data collected from the companies’ financials and determined that lease financing as a source of funding significantly impacts banks’ ROA. The study recommended that banks adopt lease financing as a source of funding to enable smooth operational capability.

Alazzam (2015) sought to determine the motivators and challenges to adopting finance lease among contractors in Irbid City. It was determined that lease financing improved tax saving, improved firms’ liquidity levels, and led to better profit realization. Similarly, Salam (2013) upon investigating lease financing and returns among Bangladeshi-based SMEs, showed that appropriate lease financing practices significantly improve the firms’ financial outcomes.

Alkhazaleh and Al-Dwiry (2018) focussed on Jordanian Islamic banks to determine how lease financing impacted their performance. The study relied on reported financial statements of the banks that had practiced financial leasing between 2010 and 2016. Regression analysis revealed that the banks reported incremental value on ROA and ROE. Kibunja and Fatoki (2020) investigated how debt financing impacted performance of NSE-listed non-profiteering firms.
The study used data reported between 2013 and 2017. It was revealed that medium-term leasing agreements significantly improved ROE while long-term debt financing had a positive but insignificant effect on the ROE. Munene (2014) reported no significant relationship between finance leasing and performance among NSE-listed companies.

Udeh, Nwude, Itiri and Agbadua (2016) affirmed that lease financing is significantly influenced by prevailing market and internal conditions. Olawale, Ilo and Lawal (2017) noted that larger firms report more income and profitability ratios because they have increased access to conventional debt financing while smaller firms access alternate funding such as lease financing. The study determined that although lease financing was profitable, the impact was insignificant. Similarly, in a study carried out by Ajibola, Wisdom and Qudus (2018) on how capital structure impacted profitability among Nigerian manufacturers, it was determined that lease financing in the form of short and medium debts had an insignificant relationship with financial returns.

2.3.3 Credit Line Financing and Financial Performance
Sufi (2007) did an empirical study on bank credit lines in corporate finance and the findings suggested that bank credit lines gave some flexibility as far as financing is concerned. The unused credit line value and cash was much greater for firms in the lower deciles of profitability as they hold more cash. Firms with no access credit lines must hold very high cash balances in lieu of the credit line facility. Unused credit lines were more efficient than cash in the protection or cover against future shocks in income (Sufi 2007).

In other studies, Acharya et al (2014) showed that bank health shocks were more important especially if they go together with liquidity shortage, such as the recent financial crisis, which complicates the banks and firms’ fund-raising capacity. Credit lines access restriction decisions resulting from financial wellness had key implications on firm’s capital structure, hiring, investment, and overall performance.
Aragon et al (2020), in their study on credit lines in microcredit in India found that a line of credit facility led to a 7% increase in profits as compared to any standard microcredit. They found that there was a rise in profitability mainly caused by the line of credit line leading to more flexible borrowing and repayments that allow sellers to invest more in goods that are profitable. Firms with higher debt and unutilised credit line showed far better operating performance in the year prior to the issue (Aragon et al., 2020).

In a study carried out by Liu and Yang (2011) to examine the impact of private debt and unused lines of credit on seasoned equity offerings in the US, found out that upon issuance, there was a negative relationship between the size of the unused credit line and performance metrics. The study showed a need to investigate how credit line financing impacted ROA of NSE-listed manufacturing companies.

Njiru (2014) investigated how cost of credit impacted profit ratios of commercial dairy firms operating in Kiambu County. The study noted that lines of credit played a key part in financial inclusion of small dairy firms, especially since traditional sources of finances such as bank loans were charged with high interest rates. The study determined that SMEs that had a higher cost of credit reported more returns. The study showed that credit lines significantly influenced credit decisions and profitability.

Gassler, Pointner and Ritzberger-Grünwald (2018) noted that debt was the main source of funding among Austrian firms. By analysing the balance sheets of the firms, the researcher determined that credit cards were the most popular lines of credit to SMEs in Austria. More than 60% of funding for SMEs was from alternative credit lines.

Rupeika-Apoga and Saksonova (2018) investigated alternative funding among small businesses in Latvia. The study revealed that non-traditional financing gained popularity over the last decade, with credit lines being popular among SMEs in the region due to their
significant positive influence on performance outcomes, both operational and financial. Bank overdraft and credit lines were the most popular credit sources between 2012 and 2016 (Van der Graaf, Kwaak, & Van der Zeijden, 2016).

Domiannah, Rotich and Ndambiri (2018) investigated the impact of adoption of plastic money on SACCO returns in Kenya. The study involved 146 respondents selected using stratified random sampling. It was determined that the use of credit cards, ATMs and debit cards resulted in increased income for the SACCOs, which in turn led to more diversification in the firms’ portfolio. Anyanzwa (2017), similarly reported that the use of credit facilities resulted in better financial performance of small businesses, this consequently improved the economic trajectory of the country. Further, it encouraged business growth and innovation.

Ngeno (2019) noted that majority of the SMEs in Sub-Saharan Africa lack access to appropriate credit lines and equity in a study investigating the relationship between credit lending terms and profit generation among SMEs based in Eldoret town. The study determined that credit line financing offered favourable lending terms to small businesses and this encouraged growth and development of thousands of businesses. Tough lending terms included short payment periods, high value of collateral, inefficient loan amounts and high interest rates. The study recommended that the government empowers microfinance institutions to enhance their capacity to extend terms that would encourage SME growth.

Palacín-Sánchez, Canto-Cuevas and di-Pietro (2019) investigated the impact of substituting bank financing channels with trade credit financing on financial outcomes of SMEs across 19 EU nations. The study sampled more than 70000 SMEs and analysed their reports between 2006 and 2015. The study revealed that trade credit were profitable sources of financing for the SMEs. SMEs which used trade credit services were able to relieve operational costs, especially for severely indebted firms. This is evident in the financial profitability indicators.
However, the researcher also noted that longer collection periods did not significantly influence firm outcomes.

Yazdanfar and Öhman (2017) assessed the impact of credit lines as a source of financing for Swedish SMEs in replacing bank credit. The study used Ordinary Least Squares, Fixed effects and Generalized Method of moments to analyse panel data from more than 15,000 businesses. The study determined that firms that had engaged in long term debt and those that reported high profitability ratios generally reported low adoption of credit lines. However, those that used credit lines often did not have long-term debts. For smaller, younger SMEs, credit line financing resulted in improved ROI. The study concluded that credit lines were important financial instruments in the economy.

### 2.3.4 Firm size and Financial Performance

Mahdi et al. (2014) discovered a positive correlation between firm size and profit margins of companies listed at the Tehran Stock Exchange. Kuncová et al (2016) in their study in Czech Republic showed that bigger firms reached stronger financial performance compared to tiny firms. Lee (2009) intimated that profit rates were positive correlated to the firm size in a non-linear manner. This he established in his study of determinants of firm performance specifically firm size of US publicly held firms.

Vu, Nguyen, Ho and Vuong (2019) assessed the impact of firm age and characteristics and their influence on performance measured as a factor of the ROA, ROE and net income per employee. OLS and quantile regressions were used to analyse reports of 693 firms operating in Vietnam. The study determined that firm characteristics such as age and net income per employee impacted firm performance, with smaller, older firms paying the least amount to their employees. However, firm size improved a firm’s financial returns and competitive positioning.
Younis and Sundarakani (2019) sought to determine whether firm size and age impacted green policy adoption and implementation. Data was collected from 117 firms and upon application of multiple regression analysis, firm size was noted to improve environmental, financial and social performance. It also noted an insignificant impact on the firms’ operational efficiency. Kijkasiwat and Phuensane (2020) sought to determine whether firm size impacts innovation capability, financial access and financial returns of SMEs operating across 29 countries in Europe and Asia. Partial least square structural equation modelling was applied on the data to reveal that the size of the firm impacted financial capital access, moderate’s innovation and mediates performance.

Jusoh (2010) noted that the size of the firm positively and significantly increases innovation adoption which translates to improved financial and operational performance. Vu, Nguyen, Ho and Vuong (2019) reported that large firms were more productive, could offer higher wages and pay more taxes. Additionally, they were more market centred and their policies set industry standards. However, Corvino, Caputo, Pironti, Doni and Martini (2019) noted inconsistencies on how firm size impacts firm performance, asserting that managerial competency and the organization’s ability to access funding to invest or expand operations are among the aspects determining returns. In a study on firm size and sustainability, Beaver (2007) noted that for small firms to survive, it was paramount that they have a highly strategic orientation.

John and Adebayo (2013) in the research on the influence of firm size on the Nigerian Stock exchange listed manufacturing firms’ profitability found that the relationship between firm size and profitability was positive for these firms. Wayongah and Ochieng (2019) found a significant relationship between firm size and financial outcomes of NSE listed non-financial firms. Karuga (2017) assessed Kenyan cooperatives to determine the influence of size on financial outcomes and noted that larger cooperatives reported higher returns than their smaller competitors. Similarly, Shibutse, Kalunda and Achoki (2019) noted that SACCO size...
positively influences SACCOs ability to generate returns. Kathuri (2014) in his qualitative study reported a positive but insignificant relationship between firm size and performance. However, he noted that firm size significantly impacted firm sustainability. While the studies recognized the existence of a relationship between firm size and performance outcomes, they needed to further assess how firm size impacted performance of firms across different sectors. The above studies showed that firm size as a moderating factor ought to be studied to determine how much the size of the company impacts its financial returns.

2.4 Summary of Research Gaps
From the review of the various empirical studies the research was able to summarize the various gaps from the literature in Table 2.1 below.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Findings</th>
<th>Research Gap</th>
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<tr>
<td>Chukwu and Wadike (2018)</td>
<td>Determine how lease arrangements impacted outcomes among Nigerian Breweries listed on the country’s stock exchange</td>
<td>It was revealed that diversifying lease arrangements led to improved financial returns than firms that relied on a single source of lease arrangement.</td>
<td>The study was however not focussed on the financial performance of listed manufacturing firms in Kenya.</td>
</tr>
<tr>
<td>Kajirwa and Ikapel (2016)</td>
<td>To determine the impact of operating lease and financial performance of state-owned sugar manufacturing firms.</td>
<td>It was concluded that the current ratio was higher in operating lease than in financial lease meaning that firms using operating lease had good short term financial strength.</td>
<td>There is contradictory empirical evidence concerning the effect of operating lease and financial performance, hence the need to research further.</td>
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Njiru (2014) investigated how cost of credit impacts profit ratios of commercial dairy firms operating in Kiambu County. The study noted that lines of credit played a key part in financial inclusion of small dairy firms, especially since traditional sources of finances such as bank loans were charged with high interest rates.

Wafula et al. (2016) investigated financing sources and performance of the Trans Nzoia County Government. The analysis showed that finance lease had positive impact on ROA. These studies showed a positive relationship between the finance lease as source of finance, and financial performance. However, the study noted a need to assess how financing lease impacts on returns among Kenya’s manufacturing companies.

Younis and Sundarakani (2019) determine whether firm size and age impacted green policy adoption and implementation. Firm size was noted to improve environmental, financial and social performance. The study did not focus on how alternative financing impacts the performance of listed firms.

Source: Research Data (2021)

2.5 Conceptual Framework

The conceptual framework depicted the interaction between the research variables of the study. The relationship between the independent variables: operating lease, finance lease and credit lines, moderating variable: firm size and dependent variable: ROA is shown in figure below:
Figure 2.1 Conceptual Framework

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Moderating Variable</th>
<th>Dependent Variable</th>
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<tr>
<td><strong>Operating Lease:</strong></td>
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<tr>
<td>Total Operating lease/Total assets</td>
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<td><strong>Finance Lease:</strong></td>
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<td>Total Finance lease/Total assets</td>
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<tr>
<td><strong>Credit Lines:</strong></td>
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<td>Total Credit Line finance/Total assets</td>
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**Firm Size:** Natural Log of Total Assets

**Financial Performance:**
ROA = Profit after tax / Total assets

Source: Research data (2021)
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
Research methodology is the techniques and processes applied to identify, process and analyse the data relating to the topic being studied. Methodology outlines the strategy adopted to answer a research question, and it identifies the methods applied. These methods determine the modes or means of data collection or even how a specific outcome can be calculated (Igwenagu, 2016). The research method could either be qualitative or quantitative in approach. This study used the quantitative study since the results were quantifiable and measurable as opposed to the qualitative data that might even seem biased. Since the study was clear on what was being sought for, and the data was in the form of statistics and numbers, quantitative research method was more appropriate.

3.2 Research Design
Cooper and Schindler (2006) intimate that a research design to be the outline for attaining research objectives. The current study applied a descriptive research design. Mugenda and Mugenda (2003) alluded that descriptive design survey is a design that helps a researcher in summarising and organising data in an effective and meaningful way. Descriptive survey was applied to obtain useful data to evaluate present practise and provide the decision basis. Cooper and Schindler (2006) intimated that descriptive research design had the advantage since the data collected was very concise and structured and thereby making the analysis factual and uncomplicated. This assisted in testing the research questions based on quantitative research methodology.

3.3 Empirical Modelling
This study used two models to test hierarchical moderated panel regression: First model: financial performance was regressed against driver variables – the reduced effect model. Second model: financial performance was regressed against driver variables and a moderator
variable, the firm size – the moderated effect model. The regression equation using panel data observed was as follows:

\[ \text{ROA} = f(\text{Operating Leasing}, \text{Finance Leasing}, \text{Credit lines}) \]

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \epsilon_{it} \] \hspace{1cm} \text{(3.1)} \hspace{1cm} \text{Reduced effect model}

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_1 X_{1it} M_{it} + \beta_2 X_{2it} M_{it} + \beta_3 X_{3it} M_{it} + \epsilon_{it} \] \hspace{1cm} \text{(3.2)} \hspace{1cm} \text{Moderated effect model}

\[ Y_{it} = \text{Financial performance (ROA) of 13 manufacturing firms listed in Kenya within the 5 periods from 2015 to 2019} \]

\[ i = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 \] observed (manufacturing companies listed in Kenya)

\[ t = \text{periods 1, 2, 3, 4, 5 (between 2015 and 2019)} \]

\[ X_1 = \text{Operating Leasing/Total assets} \]

\[ X_2 = \text{Finance Leasing/Total assets} \]

\[ X_3 = \text{Credit lines/Total assets} \]

\[ M = \text{Firm Size – measured as Natural log of Total Assets} \]

\[ \beta_0 = \text{The Constant} \]

\[ \beta_1, \beta_2, \beta_3, \text{and } \beta_m = \text{Coefficients for independent variables 1, 2, 3 and moderating variable} \]

\[ \epsilon_{it} = \text{Random Error Term} \]

### Table 3.1 Operationalisation of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Indicator</th>
<th>Measurement</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>R.O.A</td>
<td>Net Income to Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td>Independent Variables:</td>
<td>Operating lease</td>
<td>Total Operating Lease to Total Asset</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>Lines of Credit</td>
<td>Total Lines of Credit finance amount to Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>Finance Lease</td>
<td>Total Finance Lease finance amount to Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td>Moderating Variable</td>
<td>Firm Size</td>
<td>Natural Log of Total Assets</td>
<td>Index</td>
</tr>
</tbody>
</table>
3.4 Target Population
The total collection of items under consideration about which conclusions are made is called a population. Population also means all possible outcomes/cases which are under consideration in a study (Sekeran, 2008). The current study targeted the 13 manufacturing firms listed under the manufacturing and allied and construction and allied sectors in NSE. Manufacturing is vital pillar in the National Government’s Big 4 development agenda. Manufacturing is the key to unlocking the success of the other Big 4 development goals of universal healthcare, food security and affordable housing. This is because manufacturing leads to quality and numerous job creation thereby improving the standards of living, increase the access to proper healthcare and decent yet affordable housing. The Government has established many development projects in the manufacturing sector with the aim to raise the manufacturing contribution potion of the gross domestic product (GDP) from the current 10% to 15% by 2022 (Data Science LTD, 2020).

3.5 Sampling Technique and Sample Size
Cooper and Schindler (2006) note that a sampling frame must be closely related to the population. The sampling frame refers to the list of items out of which the sample was extracted. Kothari (2019) alludes that a census approach is a complete and full enumeration of all items making up the population. The current study conducted a census of the 13 manufacturing firms of the 61 firms listed at the NSE namely: Athi River Mining, Bamburi Cement Ltd, BOC Kenya PLC, British American Tobacco PLC, Carbacid Investments PLC, Crown Paints Kenya PLC, East Africa Portland Cement Company, East African Breweries Ltd, East African Cables Ltd, Flame Tree Group Holdings Ltd, Kenya Orchards Ltd, Mumias Sugar Company Ltd and Unga Group Ltd.

3.6 Data Collection Instruments
The study utilized secondary data extracted from industry reports, audited financial statements and annual reports of listed firms. The study applied the desk review of financial statements
and annual reports of all 13 firms listed in the manufacturing segment for the period 2015-2019. This period was selected to ensure that the data collected was able to capture the growth in alternative sources of finance in the country. Diagnostics Tests included Multicollinearity test, autocorrelation, normality and Hausman test.

3.7 Data Collection Procedures
The study utilized a data extraction form to extract secondary data from audited financial statements and annual reports of listed firms. This allowed for testing of the research questions and conduct correlation analysis.

3.8 Diagnostic Tests
3.8.1 Multicollinearity Test
Multicollinearity refers to the state where more than one independent variable is significantly linearly related Hair et al. (2010). Multicollinearity was tested before data analysis since high correlated explanatory variables make estimations of individual regression coefficients and their standard error difficult resulting to estimators that are not best linear unbiased estimators (Ochieng 2014).

3.8.2 Model Specification Testing
This is the pre-analysis to determine the most appropriate model among models used with panel data (Ochieng 2014). The Hausman test of the null hypothesis that the random coefficients are efficient and consistent versus the alternative hypothesis that random effects are inconsistent were carried out. In order to choose between fixed and random effects models for ROA model, a 5% significance level was used. All levels lower than 5% i.e., if P-value is <0.05 showed a rejection of the null hypothesis that random coefficients would be preferred to fixed coefficients. Hence random coefficients would be selected. Otherwise, the vice versa would apply.
3.8.3 The Unit Root Test
The unit root test being a test as to whether a time series variable would be non-stationary and has a unit root were conducted. This procedure determined whether the financial variables follow a random walk or not. One such test is the Levin–Lin–Chu test (2002) which is suited to data sets with small number of panel and relatively more time periods. This is where the ration of panels to time periods tends to zero. Im–Pesaran–Shin test (2003) is another test that allows for unbalanced panel data (Nell and Zimmermann, 2011). Both tests have the null hypothesis that all panels have unit root with the alternative hypothesis being that the series is stationary. This study used the Levin–Lin–Chu test. In the case of heterogeneous data, then Im-Pesaran-Shin test was used.

3.9 Data Analysis and Presentation
The data collected were grouped into sub-samples, edited and cleaned to diminish or eliminate ambiguity. The clean data was then coded into Eviews 10 and Stata 15 to pave way for data analysis using descriptive statistics and inferential statistics. Descriptive statistics was represented using means, standard deviation, frequencies and infographics where possible. The importance of descriptive statistic is to facilitate the meaningful description of the distribution of measurements or scores using statistics or indices (Mugenda and Mugenda, 2005).

The study adopted panel multiple linear regression model to aid in the inferential analysis. This study used two models to test hierarchical moderated multiple regression: The regression equation for the panel model was as follows:

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \epsilon_{it} \] (3.1) Reduced effect model

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_1 X_{1it} M_{it} + \beta_2 X_{2it} M_{it} + \beta_3 X_{3it} M_{it} + \epsilon_{it} \] (3.2) Moderated effect model

\[ Y_{it} = \text{Financial performance of 13 manufacturing firms listed in Kenya within the 5 periods from 2015 to 2019} \]

\[ i=1,2,3,4,5,6,7,8,9,10,11,12,13 \text{ observed (manufacturing companies listed in Kenya)} \]
\( t \) = periods 1, 2, 3, 4, 5 (between 2015 and 2019)

\( X_1 \) = Operating Leasing/Total assets

\( X_2 \) = Finance Leasing/Total assets

\( X_3 \) = Credit lines/Total assets

\( M \) = Firm Size – measured as Natural log of Total Assets

\( \beta_0 \) = The Constant

\( \beta_1, \beta_2, \beta_3, \text{ and } \beta_m \) = Coefficients for independent variables 1, 2, 3 and moderating variable

\( \varepsilon_{it} \) = Random Error Term

The study further examined the joint effect of firm size (capital) and alternative financing on the financial performance of the 13 manufacturing firms by incorporating the moderating variable into the regression model above.

3.10 Ethical Consideration

Data were mainly focussed on secondary data specifically data provided in published audited financial statements and annual reports of the 13 manufacturing listed companies. Since the data was in the public domain, there was no need to obtain permissions nor exercise confidentiality and privacy from the firms under the study. However, permission from the Graduate School of Kenyatta University and the National Commission for Science Technology and Information (NACOSTI) was obtained.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction
This chapter presented the results of the analysis of the collected research data. Specifically, the section was arranged in terms of the summary of the descriptive analysis, the correlation tests, the diagnostics tests and the panel regression analysis. The chapter further discussed the findings of the analysis concerning the earlier literature presented in the study.

4.2 Descriptive Analysis
The study focussed on the 13 listed manufacturing firms in Kenya with research data extracted for the period 2015-2019. The study was able to obtain 65 observations for each of the study variable which represented a balanced panel data set. This was deemed suitable for analysis using both Eviews and Stata. The study adopted descriptive analysis to present the summary of the research data in terms of the mean, the maximum, minimum, standard deviation and skewness and kurtosis of the research.

Table 4.1 Summary of Descriptive Results

<table>
<thead>
<tr>
<th></th>
<th>Finance Lease</th>
<th>Operating Lease</th>
<th>Credit Lines</th>
<th>Firm Size</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.0711</td>
<td>0.0239</td>
<td>0.1245</td>
<td>6.4581</td>
<td>0.0528</td>
</tr>
<tr>
<td>Median</td>
<td>0.0212</td>
<td>0.0027</td>
<td>0.0595</td>
<td>6.8778</td>
<td>0.0529</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.3117</td>
<td>0.3347</td>
<td>0.7147</td>
<td>7.9398</td>
<td>0.3673</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>-0.2812</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.0973</td>
<td>0.0617</td>
<td>0.1781</td>
<td>1.8229</td>
<td>0.1155</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.3355</td>
<td>2.7780</td>
<td>1.8302</td>
<td>-2.7379</td>
<td>-0.1618</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.3470</td>
<td>6.9363</td>
<td>5.4250</td>
<td>7.0963</td>
<td>4.02348</td>
</tr>
<tr>
<td>Sum</td>
<td>4.626053</td>
<td>1.556531</td>
<td>8.089985</td>
<td>419.7745</td>
<td>3.433409</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>0.606240</td>
<td>0.243580</td>
<td>2.031127</td>
<td>212.6879</td>
<td>0.853987</td>
</tr>
<tr>
<td>Observations</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
</tbody>
</table>
The research findings indicated that on average the ratio of the finance lease to the total assets of the listed manufacturing firms was at .071 with the maximum ratio during the period of examination at .3117. The study also showed that the overall operating lease ratio was at an average of .0239 with a maximum of .3347 during the survey period. The analysis pointed out that the mean return on assets for the listed firms was at 5.28% with maximum ROA recorded at 36.73% and the lowest at -28.12% during the survey period.

The study results indicated that the skewness within the data set ranged from -2.7379 and 2.7780 which falls within a range of -3 to +3 which indicated there was high skewness within the study observations and are fairly symmetrical. The analysis further showed Kurtosis values that ranged between 3.3470 and 7.0963 confirmed the sharp peak in the research observations. Thus, the study deemed it appropriate to conduct further normality tests to be able to establish if the data being utilized is from a normal distribution. This was conducted and presented in section 4.4 of this report.

4.3 Correlation Analysis
The research further conducted correlation analysis. The test aimed to establish correlation between the independent, moderator and dependent study variables. The research employed the Pearson correlation tests and the findings are shown in Table 4.2 below.

<table>
<thead>
<tr>
<th>Table 4.2 Correlation Results</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
</tr>
<tr>
<td>Finance lease</td>
<td>-0.1348, Sig = .2845</td>
</tr>
<tr>
<td>Operating lease</td>
<td>-0.1269, Sig = .3139</td>
</tr>
<tr>
<td>Credit Line</td>
<td>-0.0243, Sig = .8476</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.0988, Sig = .4336</td>
</tr>
<tr>
<td>Finance Lease*Firm Size</td>
<td>-0.2714, Sig = .0126</td>
</tr>
<tr>
<td>Operating Lease *Firm Size</td>
<td>0.0138, Sig = .2321</td>
</tr>
<tr>
<td>Credit Line *Firm Size</td>
<td>-0.0113, Sig = .2436</td>
</tr>
</tbody>
</table>
The results showed that finance lease had a weak negative and insignificant correlation with financial performance of listed manufacturing firms ($P = -0.1348, Sig = 0.2845 > .05$). The findings are consistent with Munene (2014) who revealed that lease financing had an insignificant effect on listed companies’ returns. However, Wafula et al (2016) observed a reverse link between the variables, reporting that finance lease as a financing source results in improved ROA. Alazzam (2015) also revealed that lease financing led to better firms’ liquidity levels, and leads to better profit realization. The findings further showed there was a weak negative and insignificant effect of operating lease on returns reported by the companies ($P = -0.1269, Sig = 0.3139 > .05$). This result is in line with Kajirwa and Ikapel (2016) who showed that operating lease resulted in reduced earnings. The results are contradictory to Kaur and Ohri (2016) who noted that operating lease resulted in an improvement in the financial performance.

The correlation tests showed that credit lines had a weak negative and insignificant effect on the returns of the involved firms ($P = -0.0243, Sig = 0.8476 > .05$). This is inconsistent with Acharya et al (2014) who showed that credit lines improve profit generation capability of firms. Aragon et al (2020), also noted that credit lines led to better flexible borrowing and investments which contributed positively to the financial performance of the firms. Analysis of the moderator variable indicated that firm size had a weak positive and insignificant effect on the companies’ returns ($P = 0.0988, Sig = 0.4336 > .05$). Mahdi et al. (2014) also noted that the size of a firm has a positive impact on firm returns. Similarly, Kuncová et al (2016) showed that firm size is strongly related to return generation capacity.

4.4 Diagnostic Tests
The research sought to conduct panel regression hence there was a need to conduct diagnostics to ensure the study met the linear regression assumptions. The study applied collinearity, autocorrelation, unit root, Hausman and normality tests.
4.4.1 Unit Root Tests
The research employed a unit root test to ensure that the series were stationary and check the problem of having a spurious regression. The research utilized stationarity tests on the observations of the research data using the Levin-Lin Chu statistical tests.

<table>
<thead>
<tr>
<th>Table 4.3 Stationarity Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Null: unit root (assumes common unit root process)</td>
</tr>
<tr>
<td>Finance lease</td>
</tr>
<tr>
<td>Operating lease</td>
</tr>
<tr>
<td>Credit lines</td>
</tr>
<tr>
<td>Firm size</td>
</tr>
<tr>
<td>ROA</td>
</tr>
</tbody>
</table>

The findings showed that research variables were stationary at the first difference I (1) because the Levin, Lin & Chu t* statistic had a probability value which was less than .05 which is significant at a 5% level of the significance level.

4.4.2 Collinearity Tests
Multicollinearity was tested before data analysis since high correlated explanatory variables make estimations of individual regression coefficients biased. The research applied the Variance Inflation Factor and Tolerance values in the analysis.

<table>
<thead>
<tr>
<th>Table 4.4 Collinearity Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Finance Lease</td>
</tr>
<tr>
<td>Firm size</td>
</tr>
<tr>
<td>Lines of Credit</td>
</tr>
<tr>
<td>Operating Lease</td>
</tr>
</tbody>
</table>
The results shown above indicated that all the variables had VIF values of less than 10 which indicates that there was no collinearity problem between the independent variables. The study tolerance values (1/VIF) indicated values that were above 0.1 which was further confirmation that the research variables did not violate any collinearity; which is an indication of very minimal correlation between the independent variables.

4.4.3 Normality Tests
The applied normality tests to review if the observations included in the regression model were from a normal distribution. The study applied Shapiro-Wilk tests on the residuals of the regression analysis.

Table 4.5 Normality Results
Normality Test: Included observations: 65

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shapiro-Wilk</td>
<td>0.974891</td>
<td>0.208141</td>
</tr>
<tr>
<td>Shapiro-Francia</td>
<td>0.969122</td>
<td>0.094540</td>
</tr>
</tbody>
</table>

Skewness/Kurtosis tests for Normality

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Pr(Skewness)</th>
<th>Pr(Kurtosis)</th>
<th>adj chi2(2)</th>
<th>Prob&gt;chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>65</td>
<td>0.2329</td>
<td>0.0659</td>
<td>4.79</td>
<td>0.0912</td>
</tr>
</tbody>
</table>

The Shapiro-Wilk tests results indicated a Prob = .2081 > .05 which indicated a significance level above the critical value which showed the data was normally distributed. Further, the results of the Skewness/Kurtosis tests for normality indicated a Prob>chi2 = .0912 > .05 which was a confirmation that the observations employed in the study were from a normally distributed sample.
4.4.4 Autocorrelation Tests
The research employed the Durbin-Watson statistics to assess the serial correlation which examines the degree of correlation between the values of the same variables across different observations in the data.

Table 4.6 Autocorrelation Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Test</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Durbin-Watson stat</td>
<td>1.646389</td>
</tr>
<tr>
<td>Model 2</td>
<td>Durbin-Watson stat</td>
<td>1.511968</td>
</tr>
</tbody>
</table>

The above results showed that the regression models resulted in D-W statistics of 1.646 and 1.512 respectively. These values fall between the critical values of 1.5-2.5 which showed that the regression model met the autocorrelation threshold which implied there was no serial correlation problem.

4.5 Hausman Specification Tests
The Hausman test of the null hypothesis that the random coefficients are efficient and consistent versus the alternative hypothesis that random effects are inconsistent were carried out and the results are presented below.

Table 4.7 Hausman Specification Results

Correlated Random Effects - Hausman Test

<table>
<thead>
<tr>
<th>Equation: Untitled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test cross-section and period random effects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>1.463849</td>
<td>3</td>
<td>0.6906</td>
</tr>
<tr>
<td>Period random</td>
<td>0.236675</td>
<td>3</td>
<td>0.9715</td>
</tr>
<tr>
<td>Cross-section and period random</td>
<td>1.893449</td>
<td>3</td>
<td>0.5948</td>
</tr>
</tbody>
</table>

Cross-section random effects test comparisons:
<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance lease</td>
<td>0.217987</td>
<td>-0.254490</td>
<td>0.054496</td>
<td>0.0430</td>
</tr>
<tr>
<td>Operating lease</td>
<td>0.582820</td>
<td>0.397476</td>
<td>0.001672</td>
<td>0.0000</td>
</tr>
<tr>
<td>Credit Line</td>
<td>0.206979</td>
<td>0.090951</td>
<td>0.014654</td>
<td>0.3378</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.029451</td>
<td>-0.014108</td>
<td>0.000036</td>
<td>0.0104</td>
</tr>
</tbody>
</table>

The findings from the Hausman test are distributed as chi-square with 1 degree of freedom indicated that the probability of the cross-section random effects was 0.6906, which is greater than 0.05 implying that it’s appropriate to adopt the random-effects model in the panel regression analysis.

**4.6 Panel Regression Analysis**

The research applied panel regression analysis to establish the influence of alternative financing on returns among listed manufacturing firms. The results are presented in Table 4.8 below.

**Table 4.8 Regression Summary**

<table>
<thead>
<tr>
<th>Dependent Variable: ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method: Panel EGLS (Two-way random effects)</td>
</tr>
<tr>
<td>Sample: 2015-2019</td>
</tr>
<tr>
<td>Periods included: 5</td>
</tr>
<tr>
<td>Cross-sections included: 13</td>
</tr>
<tr>
<td>Total panel (balanced) observations: 65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.066466</td>
<td>0.036090</td>
<td>1.841687</td>
<td>0.0704</td>
</tr>
<tr>
<td>Finance lease</td>
<td>-0.515852</td>
<td>0.171409</td>
<td>-3.009476</td>
<td>0.0038</td>
</tr>
<tr>
<td>Operating lease</td>
<td>0.306658</td>
<td>0.210141</td>
<td>1.459296</td>
<td>0.1496</td>
</tr>
<tr>
<td>Credit Line</td>
<td>0.126348</td>
<td>0.125436</td>
<td>1.007271</td>
<td>0.3178</td>
</tr>
</tbody>
</table>
The resulting regression equation was:

\[ Y_{it} = 0.0665 + (-0.5159)X_{1it} + 0.3067X_{2it} + 0.1263X_{3it} + 0.0360 \]

The findings of the regression analysis resulted in a coefficient of determination \( R^2 = 0.1729 \) which showed that 17.29% of the changes in returns of listed manufacturing firms in Kenya are determined by alternative financing. The low \( R^2 \) can be explained by the fact that the study only concentrated on the alternative funding of the capital structure within the manufacturing firms. This has not been widely adopted within the sector.

The tests for statistical significance indicated an F-statistic = 4.2497 > (f-critical = 2.36 testing at 5% significance level) and Prob (F-statistic) = 0.008 < 0.05. The findings confirmed that the regression model was fit in establishing the effect of alternative financing on the financial performance of listed manufacturing firms in Kenya.

The study further sought to test the research hypothesis using the output of the regression coefficients from the above panel analysis.

The first hypothesis of the research was;

\[ H_0: \text{Operating lease does not influence the financial performance of manufacturing firms listed at Nairobi Securities Exchange} \]

The findings of the analysis indicated a coefficient of operating lease \( \beta = 0.3067, \text{Prob} = 0.1496 > 0.05 \) which indicated that operating lease has no statistically significant influence on
companies’ financial returns. The null hypothesis was accepted. The findings are in line with Kajirwa and Ikapel (2016) who found out that operating leases led to a reduction in companies’ ROA. This contradicts Maglio, Rapone and Rey (2018) who noted that operating leases had a significant effect on the assets and liability values of firms. Salam (2013) similarly reviewed that operating lease resulted in better profitability of firm as measured by ROA and ROE. Orabi (2014) also showed that operating lease resulted in a corresponding increase in ROA among manufacturers.

\( H_{02} \): Finance lease does not influence the financial performance of manufacturing firms listed at Nairobi Securities Exchange

The results showed a coefficient of operating lease (\( \beta = -0.5159, \text{Prob} = 0.0038 < 0.05 \)) which indicated there was a negative and statistically significant influence of finance lease on returns. The null hypothesis was rejected. The findings implied that an increase in the finance lease within the listed firms will result in a -0.5159 effect on ROA. The results resonate with Bello et al (2016), and Orabi (2014), who found a significant effect of lease financing on firm returns. However, Wataka (2018) revealed that the financial performance of the firms was positively attributed to the asset financing capacity of the firms. Obiero (2016) also established that there was a significant link between lease financing and ROA.

\( H_{03} \): Credit line does not influence the financial performance of manufacturing firms listed at Nairobi Securities Exchange

The findings of the analysis indicated a coefficient of credit lines (\( \beta = 0.1263, \text{Prob} = 0.3178 > 0.05 \)) which indicated there was no statistically significant influence of the credit line on firm returns. The null hypothesis was accepted. These findings do not agree with Njiru (2014) who found out that credit lines significantly improve firm profitability. Rupeika-Apoga and Saksonova (2018) showed that credit lines significantly improved firms’ operational and
financial outcomes. Yazdanfar and Öhman (2017) also showed that low adoption of credit lines resulted in higher profitability within firms.

4.6.1 Moderated Regression Analysis
The study further conducted a hierarchical regression analysis to determine the interaction effect of firm size on the relationship between alternative financing and the financial performance of manufacturing firms listed at the Nairobi Securities Exchange.

**Table 4.9 Hierarchical Regression Summary**

<table>
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<th>Dependent Variable: ROA</th>
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<tr>
<td>Method: Panel EGLS (Two-way random effects)</td>
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<td>Sample: 2015-2019</td>
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<td>Periods included: 5</td>
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<td>Cross-sections included: 13</td>
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<td>Total panel (balanced) observations: 65</td>
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</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<tr>
<td>C</td>
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<td>0.065335</td>
<td>4.198295</td>
<td>0.0001</td>
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<td>Finance lease</td>
<td>-3.416389</td>
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<td>Operating lease</td>
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<td>12.77264</td>
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<td>Credit Lines</td>
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<td>Finance lease *firm size</td>
<td>0.556607</td>
<td>0.693697</td>
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<td>0.145283</td>
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<td>0.3042</td>
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**Effects Specification**

Cross-section fixed (dummy variables)

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<tr>
<th>Period fixed (dummy variables)</th>
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<tr>
<td>R-squared</td>
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<tr>
<td>Adjusted R-squared</td>
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</table>
The results of the hierarchical regression analysis resulted in a coefficient of determination \((R^2 = 0.8203)\) which showed that 82.03% of the changes in returns of listed manufacturing firms in Kenya are determined by finance lease, operating lease, credit lines, finance lease*firm size, operating lease*firm size, credit lines*firm size and the firm size. This showed there was a positive moderating effect of firm size on the interaction between alternative financing and financial performance of listed manufacturing firms.

**H\(_{4}\): Firm size has no moderating effect on the relationship between alternative financing and financial performance of manufacturing firms listed at Nairobi Securities Exchange**

The tests for statistical significance indicated an F-statistic = 8.1376\(>\) (f-critical = 2.36 testing at 5% significance level) and Prob(F-statistic) = .000<.05. This established the existence of a positive and significant moderating effect of firm size on the relationship between alternative financing and profits generated by listed manufacturing firms in Kenya. Thus, the research rejected the null hypothesis. Vu, Nguyen, Ho and Vuong (2019) in their study established that firm size can significantly contribute to the financial performance of listed firms. Kijkasiwat and Phuensane (2020) also found a significant moderating effect of firm size on the firm returns.

Further, the analysis indicated a coefficient of firm size \((\beta = -0.0426, \text{Prob} = 0.0003>.05)\) which indicated there was a negative and statistically significant explanatory effect of firm size on firm returns. The null hypothesis was rejected. The findings contradict Shibutse, Kalunda
and Achoki (2019) who revealed there is a positive relationship between firm size and returns. Further, Kathuri (2014) found a positive but insignificant relationship between firm size and performance metrics.

The findings further showed that the interaction between finance lease and firm size had no significant impact on returns ($\beta = 0.5566, Prob = 0.427 > .05$). The results also showed that the interaction between operating lease and firm size does not significantly impact firm profitability ($\beta = -1.9329, Prob = 0.3020 < .05$). The findings further showed that the interaction between credit lines and firm size did not have a significant influence on returns ($\beta = -0.1512, Prob = 0.3042 > .05$).
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
The fifth chapter is critical in presenting the summary of the research and the results of the analysis. The chapter also presented the conclusions in line with the study objectives and the recommendations drawn from the study. Further, the study presented the limitations of the research and the suggestions for further studies.

5.2 Summary of Research
The manufacturing sector in the country is a key contributor to the GDP, employment level and growth of other auxiliary industries. The major firms in the sector that are listed within the securities exchange have faced turbulent times that have resulted in some of the firms being suspended from the bourse as well as suffering major financial challenges. In the recent past, some of the firms have gone for multiple years without paying their investors as well as reporting positive profitability. Several studies have affirmed that there is a myriad of factors that affect their financial results, however, there has been a limited empirical examination of the effect of alternative financing on the financial performance of listed manufacturing firms. The research specifically focussed on establishing the effect of a finance lease, operating lease and credit lines on financial outcomes. The study also examined the moderating effect of firm size.

Theoretically, the study was grounded on several theories, the Modigliani-Miller theorem, Trade-off theory, Pecking Order theory, Liquidity Preference theory and the Economies of Scale theory. The theories informed the contextual factors and the abstraction of the study variables. The research employed a descriptive research design with quantitative study data extracted from the listed 13 manufacturing firms in Kenya. The study considered panel data for the period 2015-2019. The collected study data was coded into Eviews 10 and Stata 15 to support both descriptive and inferential analysis. The study was able to obtain the required
research data from annual statements from the listed firms and Capital Markets Authority reporting.

The correlation tests indicated there exists a negative and insignificant effect of a finance lease, operating lease and credit lines on firm returns. Firm size was noted to have a positive insignificant effect on firm returns. The study adopted random panel regression in the analysis as confirmed by the Hausman specification tests. The findings of the regression analysis noted that 17.29% of the changes in profitability of listed manufacturing firms are determined by alternative financing. Further, the hierarchical regression analysis indicated that jointly alternative financing and firm size predicted 20.59% of the changes in the financial performance of listed manufacturing in Kenya.

5.3 Conclusion

The study concluded that alternative financing has a positive and significant relationship with the profit generation among Kenya’s manufacturing companies. The research revealed that collectively; finance lease, operating lease and credit line led to increased returns. The results of the first hypothesis led to the conclusion that operating lease has no significant influence on firm returns.

The study established that a finance lease has a negative and significant influence on firm returns. Thus, the conclusion that the use of finance lease within the listed manufacturing firms would lead to a decrease in firm profits. Regarding the third hypothesis, the research concluded that credit lines do not have a significant influence on firm returns.

Lastly, the study concluded that firm size has a positive significant moderating effect on the relationship between alternative financing and firm returns. The study further noted that firm size has a significant explanatory power on firm returns. The interaction results showed that finance lease and firm size as well as credit lines and firm size did not have a significant effect
on firm returns. The study however concluded that the interaction between firm size and the operating lease has no significant effect on returns of the listed firms.

5.4 Recommendations

5.4.1 To the Regulator and Policymakers
The study recommends that regulatory bodies such as the CMA should develop policies and guidelines that can guide manufacturing firms in developing structures for alternative financing. This would enable the firms to be proactive in the selection of financing options which can significantly lead to better financial performance. Further, the regulatory and other government agencies can improve the support for manufacturing firms through incentives, tax policies and enhancing the ease of doing business within the country. This can be pivotal to better financial performance.

5.4.2 To the Management
The results showed that finance leasing has a significant negative influence on firm returns. Thus, recommendations were for finance managers and directors to regularly review the firm’s finance structure to ensure that financing options being utilized by the firms do not lead to a reduction in their profit generation capacity. Thus, recommendations are for the firms to use the financing option such as debt exclusively for investment activities to ensure there is sufficient income that can improve the financial outcome of the firm.

Concerning the operating leasing and firm size of the listed firms, the research suggests that the executives within the listed manufacturing firm should ensure they have all the relevant information before undertaking any capital-intensive projects. This should be guided by the assets strength of the firm to ensure the firm does not undertake unnecessary operating leases.

Further, the firms should consider other institutional factors such as growth prospects and future needs before undertaking any leases to ensure the decision is aligned to the corporate
financial goals. Thus, it is vital for managers to proactively engage in the management of their operating leases.

The study recommends that the manufacturing firms should review their internal debt policies through formulating and adopting abrasive approaches. This will ensure that the internal debt policies are consistent with global best practices and the quality of the credit lines is assessed before entering into credit lines. The research recommends that the management should set up independent units to be in charge of oversight and monitoring the credit risk to the institution. This will ensure that prudential management is undertaken in the management of credit lines within the listed firms.

5.5 Limitations of Research
The study was limited only to the listed manufacturing firms in Kenya which may limit the generalisability of the findings to other listed firms in the country. The research further only considered a single measure of financial performance which narrowed the scope of the study in examining how alternative financing affects other financial performance proxies. The research was further constrained to a time scope of 2015-2019 which resulted in a limited number of observations that were considered in the panel analysis of the interaction between the study variables.

5.6 Suggestions for Further Research
The study was only focused on listed manufacturing firms and to expand the usability of the research findings further study should be conducted focusing on alternative financing and returns of all the listed firms in Kenya. The research further suggests that more research work should be conducted to replicate this study but considering other measures of financial performance such as Net Interest Margin or Quick ratios. The study also suggests that future research work should consider an expanded period of study that will ensure more observations are taken into consideration in the analysis.
REFERENCES


Anyanzwa, J. (2017). Ease of access to ATM and credit cards in the financial system has contributed to the country’s economic growth.


Mahdi et al. (2014). Assessing the Relationship between Firm Size, Age and Financial performance in Listed Companies on Tehran Stock Exchange


APPENDICES

Appendix I: Letter of approval from the Kenyatta University Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

FROM: Dean, Graduate School
TO: Catherine Theuri
C/o Department of Accounting & Finance
KENYATTA UNIVERSITY

DATE: 25th February, 2021

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

We acknowledge the receipt of your revised Research Project Proposal entitled “Alternative Financing and the Financial Performance of Manufacturing Firms Listed at the Nairobi Securities Exchange Kenya” as per recommendations raised by the Graduate School Board of 27th January, 2021.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The forms are available at the University’s Website under Graduate School webpage downloads.

Elijah Mutua
FOR: DEAN, GRADUATE SCHOOL

C/c. Chairman, Department of Accounting & Finance
Supervisors

1. Dr. Eddie Simiyu
C/o Dept. of Accounting & Finance
KENYATTA UNIVERSITY
Appendix II: NACOSTI Licence

This is to certify that Ms. Catherine Wanjiku Theuri of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: ALTERNATIVE FINANCING AND THE FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE KENYA for the period ending 17/March/2022.

License No: NACOSTI/LP.21/5932

Applicant Identification Number: 971137

Date of Issue: 17/March/2022

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer-generated License. To verify the authenticity of this document, scan the QR Code using QR scanner application.
### Appendix III: Data Collection Schedule

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<th>Firm Name</th>
<th>Year</th>
<th>Profit after tax Kes’000’</th>
<th>Total Assets Kes ‘000’</th>
<th>Financial performance (ROA)</th>
<th>Operating Lease kes’000’</th>
<th>Lines of Credit kes’000’</th>
<th>Finance Lease kes’000’</th>
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