THE EFFECT OF CAPITAL BUDGETING DECISIONS ON THE FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS LISTED AT THE NSE

BY

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DECEMBER, 2018
DECLARATION

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

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D61/79178/2015

This Research Project has been submitted for examination with my approval as the University of Nairobi Supervisor.

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ACKNOWLEDGEMENT

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Much appreciation to my friends for the encouragement and support will forever remain indebted.
DEDICATION

This research project is dedicated to my mum, Harriet Karimi for his continued encouragement and financial support throughout the study period.
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<table>
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<th>Description</th>
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<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
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<tr>
<td>ARR</td>
<td>Accounting Rate of Return</td>
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<td>CFO</td>
<td>Chief Finance Officer</td>
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<td>CMA</td>
<td>Capital Market Authority</td>
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<td>DCF</td>
<td>Discounted Cash flows</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>IRR</td>
<td>Internal Rate of Return</td>
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<td>IRR</td>
<td>Internal Rate of Return</td>
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<td>NPV</td>
<td>Net Present Value</td>
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<td>NSE</td>
<td>Nairobi Securities Exchange</td>
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<tr>
<td>PBP</td>
<td>Payback Period</td>
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<tr>
<td>ROA</td>
<td>Return on Asset</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<tr>
<td>SPSS</td>
<td>Social Programme for Social Science</td>
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<tr>
<td>WACC</td>
<td>Weighted Average Cost of Capital</td>
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ABSTRACT

The individuals involved in making capital budgeting decisions are assumed to be rational in their investment decisions. However, in reality human irrationality can affect the capital budgeting decisions made. This results from divergence of individual goals from the goals of the firm. It is as a result of this irrationality that capital budgeting is being viewed as an inconvenient tool for shareholders wealth maximization goal. The study aimed to determine the effect of capital budgeting decisions on the financial performance of manufacturing firms listed at the Nairobi Securities Exchange. 9 manufacturing firms listed at the NSE formed the population for the study. Both primary and secondary data were relied on as means of data collection. Data was collected for the period 2012 to 2017. Secondary data was obtained from the financial statements of the listed firms while primary data employed questionnaires in data collection. MS Excel and SPSS software were employed in the analysing of the data collected. The study found that the manufacturing companies employed the capital budgeting tools in their investment decisions. NPV was the most used capital budgeting tool. NPV was followed by IRR, PBP was third and ARR was the least utilized tool. Regression results revealed that all the capital budgeting techniques (NPV, IRR, ARR and PBP) were non-statistically significant related to financial performance of manufacturing firms, with NPV and PBP producing weak negative results and IRR and ARR producing weak positive results. From the findings outlined above, the study recommends that manufacturing firms should consider; Training of their employees in the use of the aforementioned capital budgeting tools, Evaluate projects viability by ranking them in terms of priority before sourcing for external funding, Creation of a separate department to deal with the identification of viable projects and the selection of appropriate capital budgeting tools mix and consider obtaining a mix of traditional and modern capital budgeting techniques that would help the firm reduce the risks of project failure.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Capital budgeting is the most important function of finance since the results continue for a long time and the firm may lose some of its flexibility. It defines firm's strategic direction because to invest in new products, services or markets it must be preceded by capital expenditure (Brigham and Hauston, 2004). Capital budgeting enables organizations to evaluate various investment options for optimal shareholders’ wealth creation. For this purpose, it is important that future cash flows from a given project are estimated to help the management make a wise decision (Brewer, Garrison and Noreen, 2011). A company's decision to spend money on long term assets has a decisive impact on the rate and direction of its growth. A wrong choice can threaten the going concern or the continued survival of the firm; huge operational costs incurred by the firm as a result of investing in undesirable or unprofitable long term assets. Alternatively, inadequate asset investment might make it hard for the company to compete with other firms in the market and consequently result in a reduction in the firm’s market share (Pandey, 2004).

The research is anchored towards the conventional capital budgeting theory which established that in capital budgeting, the NPV criterion is used to measure shareholders’ wealth which is the main objective in financial management (Woods & Randall, 1989). The contingency theory which places emphasis on establishing a great fit between the corporate setting, outline of operations and the capital budgeting framework. The contingency theory is centered on three parts of corporate venture, to
be specific company's hierarchical attributes, besides, decentralization and regulatory factors, institutionalization and behavioral controls (Sangster, 1993).

The manufacturing industry in Kenya has grown rapidly in the past two decades to become amongst the largest sector, preceded by transport, agriculture, and communication (Republic of Kenya, 2016). The sector contributes to over 18% of the country’s GDP, while employing about 2.3 million people in both rural and urban areas. Though this rapid growth aims at improving the sector even further, it has resulted in intensification in competition among the companies consequently affecting their financial performance in terms of profits (Muscettola, 2014). This necessitates the manufacturing industry to closely evaluate their capital budgets so as to attain competitive advantage. This study aims at shedding more light into this as the available literature is not sufficient enough in describing the relationship that exists.

1.1.1 Capital Budgeting Decisions

The process by which organizations appraise their projects in order to be able to allocate scarce resources to achieve optimal output refers to capital budgeting (Burns & Walker, 2015). Capital budgeting involves current decisions that have a long term effect on an enterprise. The nature of capital budgeting consists of heavy investments being made and existence of a time gap between initial outlay and return of the investment. These characteristics therefore mean capital budgeting decisions have an implication on the financial performance of an enterprise due to the effects on profitability and risk profile of the enterprise (Thukaram, 2001). Today's companies face tremendous pressure to record growth in revenues, earnings per share and liquidity. However, these growths can only add to the value of the enterprise only
when new customers, projects and acquisitions generate returns greater than the risk adjusted cost of capital of the enterprise (Koller, Goedhart and Wessels, 2010). Capital budgeting decisions involve the process of determining projects with positive net present values and investing in them (Obi, & Adeyemo, 2014).

Capital budgeting decisions involve allocation of significant corporate resources and the decisions are mostly irreversible or where reversible the company incurs a significant loss (Fama et al., 1993). The impact of capital expenditure is on shareholder value addition. Efficient allocation of scarce or costly corporate resources is important to firm’s management. Tying huge corporate resources inefficiently in non-productive assets could lead to collapse of the firm. Corporate managers are therefore expected to reallocate corporate resources from the low returns assets to high return assets which are able to maintain consistent growth in rates of return. A good investment decision can boost a firm’s earnings sharply and dramatically increase the firm’s value. Companies appraise the various projects available to be undertaken and select the ones with greatest positive contribution to its market value. In assessing which project to undertake, management may use discounted and non-discounted cash flow methods. Evaluation is necessary because the firm may have many projects with positive contribution but the capacity to undertake these projects is limited by available resources (La Porta, Lakonishok, Shleifer & Vishny, 1997).

1.1.2 Financial Performance

Performance refers to how well the business is doing in wealth creation and acquisition of resources (Golda, 2013). It measures the financial health of a firm over a certain period. Codjia (2010), terms financial performance as an analysis of financial statements in organizations so as to establish its profitability. According to
Erasmus (2008) financial performance is considered as the best possible way for us to determine how a firm generates its’ revenues through utilization of its assets. Metcalf & Titard (1976) mentioned that performance in financial perspective involves the act of carrying out financial activity so as to realize the financial objectives within a given time period. It is not only used to determine a given period financial status but also the results of its operations and policies through monetary terms. These measures are important since they can be used for comparison between firms which are on the same or different industry. The resultant difference i.e. excess revenues over expenses for any activity is referred to as profits while the opposite of is referred to as a loss (Yahaya & Lamidi, 2015).

Over the years, different approaches have been suggested in measuring the financial performance in organizations: both financial and non-financial means. Ochieng (2012) noted that there exists an array of measures of firm performance, though there is yet to be a consensus on a universally acceptable measure of performance. The financial measures include: Return on Asset, Return on Investment and Return on Equity (Tharmila & Arulvel, 2013). Return on Assets will be relied upon in this study to measure financial performance. It shows how well the available resources are utilized in attaining profits. Whereas return on investments constitutes how much of the capital investment is returned back into the business. These measures are derived from the accounts of an organization.

Quantitative and qualitative measures of firm performance include profitability, efficiency and flexibility. Additionally, ratios are incorporated in assessing financial performance of organizations to establish the extent of control on the financial affairs as a factor of the aforementioned measures. The ratios portray the relationships
between two financial balances or calculations in determining how well a certain entity performs. This extends the traditional way of accessing financial performance that relied entirely on the financial statements balances review (Sharma et al., 2011).

1.1.3 Capital Budgeting and Financial Performance

The relationship that exists between efficient capital budgeting decisions and the firm’s financial performance has been explored by various scholars and academicians. Particularly, capital budgeting is hypothesized to play a significant role in the overall corporate strategy in maximizing the shareholder value (Dong & Su, 2010). The past studies take into considerations the accounting information where performance measures are computed and analysis done to establish the rationality or the ways in which a company operates so as to realize its goals for the investors’ assets maximization goal (Chrisy, 1966; Klammer, 1982; Munyao, 2010). This fact reveals that businesses can intensify their shareholders’ wealth through employment of modern appraisal systems. Along these lines, from a budgetary hypothesis point of view, it is ordinary that the relationship involving complex capital evaluation methods and firms' performance is certain. However, when considering the relationship between capital budgeting decisions and profitability fluctuations, the results achieved require a thorough examination. Klammer, (1973) built up that regardless of the increasing selection of refined capital assessment strategies in the U.S., there wasn’t predictable noteworthy correlation involving firms financial performance and capital budgeting decisions.

Cyprus and Lazaridis (2004), observed that for the country's business organizations to seize the opportunities provided by its location, being located between western and Eastern world and compete effectively, the investment policies needed to be
readjusted to match those of developed world. Investment was therefore identified as a key element in promoting growth to enable the country's corporations to compete internationally. The capital budgets therefore become a critical element for the success of the business in enhancing competitiveness hence sustainability. Brigham and Daves (2009) suggested that it’s the process of developing ideas such as developing new products, improving the existing ones and finding ways to cut down on operational costs that ultimately determine the growth of a company and its ability to compete and survive in its business environment. The flow of ideas is encouraged under capital budgeting where it starts with generation of ideas, followed by screening of ideas then ideas that seem viable are analyzed and evaluated for their contribution to the value of the firm.

Advanced technology and complex process systems that manufacturing firms depend on; require huge amounts of capital investments. The initial purchases of equipment essential for manufacturing, coupled with anticipated replacements and maintenance charges of the same equipment’s are cost prohibitive. Hence, manufacturing firms have to take into consideration the long term goals and expenses related to these capital investments, i.e. the manufacturing firms should select investments that yield long term benefits while at the same time ensure that the expenses related to the selected investment can be sustained in the short term. While the profits of a manufacturing firm may not be directly attributable to capital investments, still these investments help to maintain the financial performance of a firm by maintaining its profit-turning capacity (Brian, 2012).
1.1.4 Manufacturing Firms Listed at Nairobi Securities Exchange

Over the years, the manufacturing and allied sector has been crucial in supporting economic growth and development in Kenya. It has a diverse industry division and nine among them are listed at the NSE. Some of the notable sub-sectors including tobacco products, beer and spirits, fruit canning, flour milling and sugar refining. The manufacturing sector needs a keen attention in order to ensure that there is a meaningful influence to Kenya’s economy. According to the 2016-2017 budgets, Kenya has set out to enhance the economic growth by double digits by the year 2030 and this is through prioritizing key industries in the manufacturing sector as the vehicles to deliver these goals (Wakiaga, 2016). As at 2015, manufacturing sector recorded a growth of 3.5 percent compared to 3.2 percent as at 2014. The contribution of the manufacturing sector to the GDP grew to 10.3 per cent in 2015 from 10.0 per cent in 2014.

The sector has been growing rapidly in the recent past with more players introduced in the industry. This growth is projected to increase even further to the rate of over of 8% over a duration of two decades (Kenya’s Economic Outlook, 2011). Hence, it is paramount that the firms in the manufacturing industry perform well financially. One way to ensure that this is achieved is for the firms to choose investment projects that are long term in nature and profitable which will enable the firms to sustain their impeccable financial performance in the long term. There are currently nine companies listed in the manufacturing segment at the Nairobi Security Exchange (NSE). Five of these companies are used in determination of daily NSE index (NSE, 2015). The nine companies listed in the manufacturing segment are attached as appendix I.
1.2 Research Problem

Firms are established with one objective, and that is to maximize their shareholders' wealth, the financial theory postulates so. The firm’s management doesn’t just want to select any investment, but optimal investments that would impact on the value of the shareholders' wealth positively (Copeland and Weston, 1992). According to the economic rationality concept capital budgeting techniques can be inferred as a way of satisfying the firm’s goal of shareholders' wealth maximization. Further, the firms can attain this goal by using capital budgeting techniques that are sophisticated. Consequently, from the angle of conventional monetary theory, the relationship between capital budgeting and financial performance is expected to be positive. Capital budgeting is an important activity in business and needs wide information so as to make valid and concrete investment decisions because if not well coordinated, a lot of corporate financial resources can easily be wasted if the investment turns out to be wrong or uneconomic.

In Kenya, the manufacturing sector plays a key role in the Kenyan’s economy through employment and production. The manufacturing sector is capital intensive in nature and normally requires huge capital (overall credit to the manufacturing sector increased by approximately more than Ksh.50 million in 2015) (Economic Survey, 2016). This capital is required for investing in long term projects that are not only profitable but also sustainable in term of costs incurred in the short term. Capital budgeting process will be relied upon by the manufacturing firms to determine profitable investment by use of its various techniques. Therefore, it is necessary to analyze the proposed investments mix in order to establish gains from their investments.
Several studies have been done in the area of capital budgeting and financial performance and they have yielded mixed and inconclusive results. Klammer (2008) studied the association between capital budgeting techniques and performance in American firms. He found that capital budgeting and performance had no significant correlation. However, KA et al., (2010), found a positive association where the firms employ more of the sophisticated techniques than the naïve techniques. Axelsson, Jakovicka & Kheddach (2003) investigated the relationship between capital budgeting technique sophistication and the firm’s performance of Swedish companies. The results established that the relationship though negative was insignificant.

Locally, several researchers have done studies on capital budgeting; Wachira (2017), looked at the effect of capital budgeting decisions on profitability of listed firms. The study concludes that capital expenditure by listed firms leads to an increase in profitability. Nyambura (2014) did a study to demystify the association between capital budgeting and financial performance. He established that capital budgeting techniques and the financial performance have no significant relationship. The above studies have been carried out at both the international and local level. Due to the contradictory results of the studies, the current study therefore intends to interrogate further the relationships in an attempt to resolve the conflicts. Moreover, the studies have focused on other sectors of the economy and not the manufacturing sector. In addition; most of the local studies conducted have concentrated on capital budgeting techniques and not decisions. The current study intended to fill this knowledge gap by studying; what is the effect of capital budgeting decisions on the financial performance of manufacturing firms listed at the NSE?
1.3 Research Objective

The study sought to determine the effect of capital budgeting decisions on the financial performance of manufacturing firms listed at the NSE.

1.4 Value of the Study

The study is useful to Chief Finance Officers of manufacturing firms listed at the exchange. It highlights that the CFOs are efficient in making their capital investment decisions. The study provides them with a tool of assessing their managerial competence and where necessary take remedial action.

The study enables corporate managers assess the organization’s ability to continue in operation or change their investment strategies to align them more to market expectations. This helps to reduce misallocation of corporate resources.

This study is significant to academicians/researchers with special interest in the manufacturing sector as it divulges information regarding capital budgeting techniques and the association they have with financial performance. It also appreciate that the techniques taught in class cannot just be implemented directly without considering their effect on firm performance. Furthermore, researchers who wish to carry out further research in capital budgeting for other industries both within and outside the NSE can use the findings of this study.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter, identifies, analyses and reviews past studies relating to whether a relationship exists between capital budgeting decisions and organizational financial performance. It presents the theories which the study is anchored on and their implications to the study. There is also the empirical review that presents similar studies done by other scholars on the topic. The chapter concludes with a summary of the literature and an overview of the conceptual framework.

2.2 Theoretical Review

Theories are concepts, perspectives or principles which people make sense of the experiences they go through in the world (Stoner et al., 2003). This study was guided by two main theories which provided a framework through which the study was conducted. This include; contingency theory and the conventional capital budgeting theory.

2.2.1 Contingency Theory

According to this theory, the method which a company selects for capital budgeting is dependent on a number of factors and also the success of capital budgeting is also not dependent on method selected. The contingency theory was improved by Pike (1986) who noticed that asset portion proficiency isn't simply a matter of embracing modern, hypothetically predominant assumption strategies and methods rather
emphasis ought to be given to the fit between the corporate setting, outline of operations and the capital budgeting framework.

The theory is centred on three parts of corporate venture to be specific; companies hierarchical attributes, decentralization and regulatory introduction and lastly, institutionalization and behavioural controls. Sangster (1993) concludes that company size has no influence in the selection criteria for an investment appraisal method. However, Mills and Herbert (1987) find that the investment appraisal method depends on the company size. Pike (1996) did a longitudinal survey to assess the state of the art in capital budgeting. He observes that the use of discounted cash flow techniques has increased overtime. He attributes this to the use of information technology tools which have made data collection and analysis easier.

Although the theory has received a lot of criticism, it is still relevant in research for it has emphasized on the corporate investment techniques and procedures used by the investors and firms in order to influence their financial performance. The theory doesn’t point out the actions that the managers can adopt should they be faced with different complex capital budgeting decisions.

2.2.3 Conventional Capital Budgeting Theory

The conventional capital budgeting theory was developed by Woods & Randall (1989). In which the theory established that in capital budgeting, the NPV criterion is used to measure shareholders’ wealth which is the main objective in financial management. The riskiness of projects cash flows is equal to the firms’ riskiness of other assets cash flows and the firms weighted average capital cost (WACC) is used to calculate NPV. Some future investment opportunities (FIOs) are acknowledged by
the market due to their uncertainty and risk perceptions. Conventional Capital planning approaches are biased towards FIOs in the long term in potential opposition to investors' interests. Therefore, discounting ought to be done at the required return on equity (Ke) rather than WACC (Ka) to determine shareholders’ wealth attributable to FIOs.

The ability to borrow on FIOs basis would increase shareholders wealth by quantifiable amount, if the management has a clear incentive to increase its credibility in the financial markets. When organization is perhaps reluctant to reveal information or incapable of convincing markets of prospect cash flows, a deviation will be flanked by the market value of shares as well as factual investor’s possessions (Woods & Randall, 1989). The theory is relevant on this research for it outlines the essences of the criteria of the shareholder before making investment decisions.

2.3 Determinants of Financial Performance

A firm’s financial performance is affected by different factors and may be viewed from factors related to the firm specific and macro-economic determinants from different visions and in different ways. They include; Growth opportunities, Firm size, Profitability and the Liquidity of the firm.

2.3.1 Growth Opportunities

The measurement of growth opportunities is in terms of the assets in place representing the portion of a firm’s worth (Myers, 1977). When the proportion of the firm’s worth is lower, recounted by the assets available to the firm, the growth opportunity of the firm is greater (Myers, 1977). Firms with greater growth opportunities have the advantage of launching new product lines, capitalizing on
more development projects, acquiring other firms in the same business line, renovate and replacement of tangible assets. Also, Abor (2005) postulates that the growth of a firm, positively affects firms financial performance. Financial performance is seen to be higher in firms with low growth opportunity and lower in firms with average growth opportunities (Myers, 1977).

The firm’s future financial performance is influenced by growth (Rajan, 1995). Higher growth also means an increase in future prospect for investors. A firm’s economic growth propels it to a better position in the market hence a good competitive advantage against its competitors. Growth prospect may be viewed as an asset that adds the company’s value, but growth is not collateralized and is not a taxable income. Brigham and Daves (2009) suggested that it’s the process of developing ideas such as developing new products, improving the existing ones and finding ways to cut on operational costs that ultimately determine the growth of a company and its ability to compete and survive in its business environment. The flow of ideas is encouraged under capital budgeting where it starts with generation of ideas, followed by screening of ideas then ideas that seem viable are analyzed and evaluated for their contribution to the value of the firm.

2.3.2 Firm Size

Maher & Anderson (1999) argued that firm size positively affects the financial performance of firms because of increasing output of reduction of expenditure on unit cost of functional efficiencies. Large firms enable investors to promptly respond to changes in market conditions by effectively diversifying their assumed risks. Baxter (1976) and Tudose (2012) argued that large firms possess monopoly power that allows them to price their products above the economic costs accruing from
production so as to maximize profit. In conditions of investment performance, Ahmad (2011) states that business risks could be reduced by the ability of large companies to diversify their investment portfolios. The analysis of Grace and Timme (1992) that unlike smaller companies, larger companies contain the resources that draw and maintain managerial talent due to their ability to take advantage of the benefits associated with economies of scale.

The size of the organization affects both the profitability and liquidity of firms. Broader market share is acquired by larger firms which make them possess more competitive power in contrast to small firms. Moreover, larger firms have better opportunities to work in the fields that seek high capital requirements as they have huge resources. This scenario provides a chance for them to work in higher profit environments with less competition (Yabs, 2015). Smaller organizations are deemed to be more profitable since they have high liquid assets compared to big organizations in the short term.

2.3.3 Profitability

Profitability is the essential objective of all business ventures as they seek to optimize the share value of the shareholders. Without profitability, the business will not achieve the desire level of success over the long time because profitability is an indicator of the efficiency with which the management applies the resources entrusted to them by the shareholders in the generation of wealth. Therefore, measuring present and past benefit and anticipating future profitability is important in decision making regarding a firm’s future prospects. Management benefits are measured with a salary proclamation. This is basically a posting of pay and costs amid a timeframe on an annual basis for the whole business.
An income statement is customarily a summary of a firm’s operations used to gauge how well the management team have utilized the firm’s resources in creation of wealth for the shareholders. In any case, an ace forma pay explanation measures the performance of an organization be comparing its current performance to the past records and the postulated future performance. Benefit can be decayed into its principle segments: net turnover and net overall revenue. In accordance with Ross et al. (1996), both can impact the profitability of an organization at a given time. In the event that a high turnover implies better utilization of advantages possessed by the organization and in this way better proficiency, a higher net revenue implies that the element has generous market control.

2.3.4 Liquidity

The main element of the firm’s performance is the firm’s liquidity. Liquidity indicates the capability of the organization to meet recurring financial obligations. Liquidity enables firms to avoid default on its financial responsibilities and, successfully, avoid financial crisis (Damodaran, 2001). Maintaining an acceptable level of liquidity is vital for the firms’ survival. Low levels of liquidity can result in increased financial costs and eventually affect the firms’ capacity to settle its financial obligations (Pettit & Singer, 2005). When external sources of funds are insufficient, an organization can finance its activities and investments using its liquid assets. High levels of liquidity allow organizations to transact with unexpected eventualities and achieve its responsibilities during times of low earnings (Onsomu, 2003).

Kester (2006) did a study on the evolution of the distributions of size and performance, conditioned on liquidity constraints and age. The findings were that liquidity problems had an insignificant effect on firms’ financial performance in
any given year. Credit shortages constrain firm’s growth due to limited investment opportunities and inadequate financial resources. This reduces the possibilities of undertaking long term development which ultimately affect avenues for generating additional revenue.

2.4 Empirical Review

International and local studies have been done to support the association between Capital budgeting and firm’s financial performance but these studies have produced varying outcomes.

2.4.1 Global Studies

Afonso, Jose, Fatima and Ney (2017) sought out to investigate capital budgeting practice in a group of small cotton ginning firms in the Brazil exchange. Interview guides were relied upon and content analysis was used in the analysis of data. 10 managers of the different firms were the population subject. The findings established that capital budgeting is not seen as sophisticated and is not considered important, as they are other factors such as the business strategy and environmental factors which directly affects and impose high risks. The limitation of this result is that it may lack generalizability.

Maroyi (2011) sought to investigate commonly used techniques applied by South Africa mining companies in their capital budgeting decisions. 10 companies at the JSE were used in the study due to non-response of the other 25 companies. SPSS and Excel were applied in the analysis. Considering the capital budgeting techniques the study found out that South African mining companies preferred the DCF technique
over other capital budgeting techniques. He also established that DCF techniques use was stronger in both small and large companies.

Gupta & Pradhan (2017) investigated capital budgeting techniques that were commonly used in India manufacturing firms. The study relied on primary data where questionnaires were administered to 250 companies but only 75 companies responded. Analysis of data was done using the regression model. The findings of the study were that the discounted techniques are heavily relied upon by these companies when evaluating the rate of return of the project.

Klammer (2008) examined the association between capital budgeting techniques and performance of American firms. 184 firms’s were the population of the study. Payback methods and the discounting techniques were the major types of capital budgeting techniques that were tested. Regression was applied in the hypothesis analysis. The results established positive association between the two capital budgeting techniques and performance of American firms. However, the positive association was not significant.

2.4.2 Local studies

Ofunya (2015) determined the association between capital budgeting tools and Water Services Boards performance in Kenya. A semi-structured questionnaire was relied upon in data collection from respondents. Out of the 8 questionnaires that were sent out, 6 were returned completed (75%) response rate. The researcher used a combination of descriptive statistic, content analysis and regression to analyze the data. The study found that capital budgeting techniques and organizational performance are positively correlated.
Muthoka (2013) investigated the association between capital budgeting techniques and the growth of manufacturing firms at the NSE. Descriptive design and a census survey were the data collection tool used. Finance officers of the firms were the focus of the study who were 8 in number as at 2013. Descriptive statistics and content analysis were used in analysing data. He found that capital budgeting process is indeed a vital element in the growth of manufacturing firms and can determine their success or failure in future, depending on evaluation and investment decisions made.

Cherono (2017) did a study to determine the association between capital structure and financial performance of manufacturing firms listed at the NSE. The research relied on the descriptive technique and regression analysis and targeted 15 listed firms at the NSE as at 31st December 2016. The period for the study was 2012 to 2016. The study concluded that it is only liquidity, which affects financial performance, while capital structure, firm size and growth have no significant effect on financial performance.

Kachila (2012) investigated the relationship between capital budgeting efficiency and stock return variations for manufacturing firms at the NSE. The period for the study was 2007 to 2011. Secondary information was obtained from the firm’s financial statements and regression analysis was used to analyse the data. The research established that firms in the manufacturing sector were not efficient in capital budgeting during the period of study. The research also established that capital budgeting efficiency and firm specific stock return variation are significantly positively correlated.
2.5 Conceptual Framework

Conceptual framework is a schematic arrangement which shows how dependent and independent variable relate to each other. In this study, independent variables are; capital budgeting decisions and the dependent variable is financial performance as measured by ROE.

**Figure 2.1: Conceptual Framework**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital budgeting decisions</td>
<td>Financial Performance</td>
</tr>
<tr>
<td>• NPV</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>• IRR</td>
<td></td>
</tr>
<tr>
<td>• ARR</td>
<td></td>
</tr>
<tr>
<td>• PBP</td>
<td></td>
</tr>
</tbody>
</table>

2.6 Summary of Literature Review

This chapter has reviewed the relevant literature for the study. Theories on which the study was firmly based on were reviewed. They include; Contingency theory, and Contemporary Capital budgeting theory. Several empirical studies have been conducted both locally and internationally over the years, however, these studies have mainly focused on identifying capital budgeting techniques applied (Maroyi, 2011; Muthoka, 2013; Gupta & Pradha, 2017; Klammer, 2008). Even for the studies done on the effect of capital budgeting on the financial performance of firms, they have not
been fully conclusive on the relationship that exists. While some researchers obtained a positive relationship, others obtained a minimal to no relationship at all. Additionally, majority of the studies focussed on developed economies and thus the findings may not be replicable in the developing countries. Locally, although some studies having been conducted, these have focused on different contexts and the results were contradictory. It is against this backdrop that this study was conducted, and aimed at filling these gaps by examining the effects of capital budgeting decisions on financial performance of manufacturing firms listed at the NSE.
<table>
<thead>
<tr>
<th>Author</th>
<th>Focus of study</th>
<th>Methodology</th>
<th>Findings</th>
<th>Research Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ofunya (2017)</td>
<td>To determine the association between capital budgeting methods and performance of Water Services Boards in Kenya.</td>
<td>8 water service boards that were in existence in Kenya in 2008 were selected. The study relied on content analysis, descriptive design and regression in the analysis.</td>
<td>The study revealed that there is a tendency among the Water Services Boards towards the use of capital budgeting techniques that are sophisticated.</td>
<td>Need to extend the study to other sectors in the economy. Manufacturing industry was the main focus of the current study.</td>
</tr>
<tr>
<td>Afonso, Jose, Fatima and Ney (2017)</td>
<td>To investigate capital budgeting practice among cotton firms in Brazil.</td>
<td>10 different firms were selected and the study used exploratory and qualitative approach. Further content analysis was also employed.</td>
<td>The study found that Capital budgeting are unsophisticated techniques, nevertheless they are still used by businesses because they directly affects and impose high risks.</td>
<td>Extension of the study to other sectors such as Manufacturing companies and do the findings hold true in other regions such as Kenya?</td>
</tr>
<tr>
<td>Muthoka (2013)</td>
<td>To determine the association between capital budgeting techniques and the growth of manufacturing firms at the NSE</td>
<td>The study selected 8 manufacturing firms that were listed at the NSE as at 2013. Descriptive design and content analysis were employed in the analysis.</td>
<td>The overall results indicated that that capital budgeting process is indeed a vital element in the growth of manufacturing firms and can determine their success or failure in future.</td>
<td>Investigation of other variables besides growth rate that affect manufacturing firms. This study focussed on financial performance.</td>
</tr>
<tr>
<td>Author</td>
<td>Focus of study</td>
<td>Methodology</td>
<td>Findings</td>
<td>Research Gap</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maroyi (2011)</td>
<td>To determine the capital budgeting techniques used in practice by mining companies in South Africa.</td>
<td>Questionnaires and interview guides were administered to 10 mining firms at the JSE.. Descriptive statistics was used in the analysis.</td>
<td>The study indicated that South African mining companies preferred the DCF technique over other capital budgeting techniques.</td>
<td>The research focussed on the mining industry hence cannot be generalized. Moreover, the study focussed on the preferred capital budgeting technique and not financial performance.</td>
</tr>
<tr>
<td>Cherono (2017)</td>
<td>To determine the association between capital structure and financial performance of manufacturing firms at the NSE.</td>
<td>The period covered by the study 2012-2016. Descriptive design was used in the analysis.</td>
<td>The study found that capital structure had no significant effect on the financial performance.</td>
<td>Information lacking on how capital budgeting would affect financial performance.</td>
</tr>
<tr>
<td>Kachila (2012)</td>
<td>Capital budgeting efficiency and stock return variations for manufacturing firms at the NSE.</td>
<td>NSE listed manufacturing firms for the period 2007-2011. The study adopted regression and correlation for the analysis.</td>
<td>Capital budgeting efficiency and stock returns were found to be significantly positively correlated.</td>
<td>The study concentrated on the impact of capital budgeting on share prices and thus left a gap on the financial performance.</td>
</tr>
<tr>
<td>Gupta &amp; Pradhan (2017)</td>
<td>To determine the effect of capital budgeting decisions on both listed and non-listed manufacturing firms in India.</td>
<td>75 manufacturing and non-manufacturing were selected and the researcher used regression analysis.</td>
<td>The findings were that the discounted techniques are mostly preferred by the firms.</td>
<td>Do the findings hold true for other regions such as Kenya? Information lacking on the effect of capital budgeting on the financial performance of manufacturing firms.</td>
</tr>
<tr>
<td>Klammer (2008)</td>
<td>Capital budgeting techniques and performance in American</td>
<td>The population consisted of 184 manufacturing firms and regression was</td>
<td>Capital budgeting techniques and Financial performance were found not to be</td>
<td>Do the findings hold true for other regions such as Kenya? The current study will specifically</td>
</tr>
<tr>
<td>firms</td>
<td>used in the analysis</td>
<td>significantly associated</td>
<td>focus on Kenya</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains methods of research to be applied objectively in the study. It shows the population of the study, the research design used, data collection method applied and the data analysis criteria employed.

3.2 Research Design

Research design is a strategy that shows the way data can be collected for analysis or valuation that entails categorizing the information collection approach(s), the tools applicable and how these tools can be managed, and the ways the data can be planned as well as scrutinized (Kisilu et al., 2006). The study employed the descriptive research design. This entailed obtaining information about a phenomenon using a systematic and detailed manner. It enabled close association between the variables to be made, and where possible valid conclusions were drawn.

Additionally, the descriptive research design ensured minimal interferences by the researcher hence the most appropriate for the study (Mugenda and Mugenda, 2003). Though there are a few legitimate concerns with regard to the technique statistical validity, it can still be relied upon as invaluable scientific tool so long as the researcher appreciates its limitations. The descriptive research design helped to establish how capital budgeting decisions affects financial performance of the study population elements.
3.3 Population

All objects or elements in any field of investigation form the universe or population (Kothari, 2004). The population under this study comprised of all the nine firms in the Manufacturing sector listed at the NSE as at 31st December 2017. These firms signify the major economic sectors in Kenya. Additionally, they are openly listed as well as publish their fiscal annual information; therefore information regarding them was easily obtained.

3.4 Data Collection

The data was collected both from the primary as well as the secondary sources from the nine listed manufacturing firms in Kenya for the period 2012 to 2017. Secondary data was derived from the published accounts of the manufacturing firms since it is verifiable and authentic and can be used to derive conclusive information as far as the companies are concerned. Primary data was obtained via questionnaires which were administered to manufacturing firms specifically to officers directly involved in the day to day capital budgeting procedures to establish appraisal techniques employed by them. The questionnaires were closed and only open ended where necessary and formulated into three sections. Section 1 gathered information of the respondent so as to establish the identity. Section 2 gathered information on capital budgeting to establish those involved in budgeting decisions while section 3 concentrated on the use of capital budgeting to depict the preferred technique by each respective firm. The questionnaires were dropped and picked later in all the banks. The data collection procedures had been formerly employed by Munyao (2010) and Chai (2011).
3.5 Data Analysis

The data collected was sorted, cleaned and then coded into the scientific analysis instrument, SPSS version 22. The data coded was then analysed by both inferential and descriptive statistics and findings were presented using means, standard deviations and Tables.

3.5.1 Analytical Model

The following regression model was used:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 \]

Where:

Where \( Y \) = financial performance as measured by ROE (Net Income/ Average Equity)

\( \beta_0 \) = Constant, the value of \( Y \) when the value of \( X \) is zero

\( \beta_i \) (i= 1, 2, 3, 4) = Coefficients of determinants of financial performance.

\( X_1 \) = NPV as measured by the effect of a shilling in the Present Value technique

\( X_2 \) = IRR as measured by the effect of a shilling in the Internal Rate of Return technique

\( X_3 \) = ARR as measured by the effect of a shilling in the Accounting Rate of Return technique

\( X_4 \) = PB as measured by the effect of a shilling in the Payback technique

\( \epsilon \) = Error term
3.6 Diagnostic Tests

The linearity test was achieved through the use of F-statistic in ANOVA. Normality was determined by skewness and kurtosis tests. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It was tested using Durbin-Watson statistic (Khan, 2008).

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero should there be a full linear dependence involving them and as it move towards to zero then the multicollinearity becomes extra powerful (Burns & Burns, 2008).

3.5.2 Test of Significance

The statistical significance of each independent variable explaining financial performance was tested using student t-test at 5% level of significance. The F-test evaluated the general significance of the regression model.
CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter presents and analyze data collected from research respondents and audited financial statements of the manufacturing firms ready for interpretation into research findings. The research population consisted of 9 listed manufacturing firms at the NSE. The data has been analyzed and research findings presented below.

4.2 Response Rate

Data was obtained from all the 9 firms representing a response rate of 100%. The researcher was also able to obtain secondary data from the published financial statements of the listed manufacturing firms.

4.2.2 Respondents Duration of Service

Analysis of the respondents revealed that 77.8% had worked for their respective firms for a period between 1-5 years. Those respondents who have worked between 5-10 years and over 10 years are the lowest at 11% respectively as shown in figure 4.2.2 below.
4.2.3 Respondents Existence of Capital Investment Manual

This was to establish whether the listed manufacturing firms had a manual to guide them on capital investments projects. All the respondents acknowledged their firms having a capital investment manual thus representing the entire population of 100%.

4.2.4 Respondents Use of Capital Budgeting Techniques

Data collected was used to establish the techniques employed by the manufacturing firms and whether they would deviate from them at any one point. It also showed the assessment of risk and the difficulties faced in the process of capital budgeting. 44% of the respondents preferred using NPV while 22% preferred the IRR and PBP technique equally; ARR was the least preferred at 11.11%.
4.2.5 Respondents Switch from one Technique

Most respondents, 44% stated that their firms have been consistently using one technique over the other without substituting it for another technique. 22% of the respondents were unable to confirm or deny whether their company has ever substituted one technique for another. Another 22% stated that such a switch from one capital budgeting tool to another had been witnessed in their organization.

Source: (Research Findings, 2018)
4.2.6 Respondents Difficulties Faced in Capital Budgeting Process

Each of the estimating cash flows and determining discount rate difficulties had a proportion of 14.29% individually while incorporating risk ranked highly with a 71.43%.

4.3 Descriptive Statistics

Table 4.1: Descriptive Statistics of the Selected Variables

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>-0.034</td>
<td>0.012</td>
<td>-0.0007</td>
<td>0.014</td>
<td>-2.27</td>
<td>5.86</td>
</tr>
<tr>
<td>NPV</td>
<td>3</td>
<td>5</td>
<td>4.33</td>
<td>0.866</td>
<td>-.83</td>
<td>-1.08</td>
</tr>
<tr>
<td>IRR</td>
<td>3</td>
<td>4</td>
<td>3.56</td>
<td>0.527</td>
<td>-.27</td>
<td>-2.57</td>
</tr>
<tr>
<td>ARR</td>
<td>1</td>
<td>3</td>
<td>2.00</td>
<td>0.707</td>
<td>0.00</td>
<td>-.29</td>
</tr>
<tr>
<td>PBP</td>
<td>3</td>
<td>4</td>
<td>3.33</td>
<td>0.500</td>
<td>.86</td>
<td>-1.71</td>
</tr>
</tbody>
</table>

Source: (Research Findings, 2018)

Descriptive statistics revealed that manufacturing companies rely on NPV in decision making as supported by a mean of 4.33 and standard deviation of 0.866. IRR was also found to be useful in decision making with a mean of 3.56 and standard deviation of 0.527. ARR had the lowest mean amongst the capital budgeting techniques at 2.00 and standard deviation was 0.707. The study also revealed that manufacturing companies rely on PBP in decision making as the mean was 3.33 and standard deviation was 0.5. ROE had the lowest mean and standard deviation amongst the selected variables.
From table 4.1 above, ROE is highly skewed while NPV, IRR, ARR and PBP are moderately skewed. On the other hand a kurtosis of 3 indicates a normal distribution. A kurtosis less than 3 indicates a flatter distribution and greater than 3 kurtosis indicates a distribution more peaked than a normal distribution. NPV, IRR, ARR and PBP have a flatter distribution while ROE has a more peaked than normal distribution.

### 4.3 Diagnostics Statistics

The Multicollinearity test is conducted to establish whether the model independent variables have similarity characteristics amongst themselves. Similarities between the variables shows strong correlation. The rule is that if the VIF value is within 1-5 then, there is no Multicollinearity (Vatcheva et al., 2016).

**Table 4.1: Multicollinearity Test**

<table>
<thead>
<tr>
<th>Model</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV</td>
<td>.542</td>
<td>1.846</td>
</tr>
<tr>
<td>IRR</td>
<td>.325</td>
<td>3.077</td>
</tr>
<tr>
<td>ARR</td>
<td>.542</td>
<td>1.846</td>
</tr>
<tr>
<td>PBP</td>
<td>.542</td>
<td>1.846</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients*</th>
</tr>
</thead>
</table>

The VIF of all the independent variables is less than 5. We therefore conclude that there is no multicollinearity. Hence, the independent variables can together be used as determinants of financial performance in regression analysis.

Source: (Research Findings, 2018)
4.4 Correlation Analysis

Correlation analysis is employed to determine if there is a link involving two variables which lies between (-) strong pessimistic correlation while (+) perfect optimistic correlation. The results from the correlation table 4.3 below reveal that the relationship between IRR, ARR and PBP with financial performance as measured by ROE is positive and non-statistically significant as depicted by their r values which are all positive and their p values which are greater than 0.05; (IRR=0.682, ARR=0.136 and PBP=0.624) at 5% significance level. NPV capital budgeting technique had a negative and non-statistically significant relationship with financial performance as measured by ROE with a p value of 0.993.

Table 4.3 Pearson Correlation Coefficients

<table>
<thead>
<tr>
<th></th>
<th>ROE</th>
<th>NPV</th>
<th>IRR</th>
<th>ARR</th>
<th>PBP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Correlations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>-.001</td>
<td>.059</td>
<td>.214</td>
<td>.071</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.993</td>
<td>.682</td>
<td>.136</td>
<td>.624</td>
<td></td>
</tr>
<tr>
<td><strong>NPV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.001</td>
<td>1</td>
<td>.807**</td>
<td>-.264</td>
<td>-.586**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.993</td>
<td>.000</td>
<td>.064</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td><strong>IRR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.059</td>
<td>.807**</td>
<td>1</td>
<td>.038</td>
<td>-.241</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.682</td>
<td>.000</td>
<td>.795</td>
<td>.092</td>
<td></td>
</tr>
<tr>
<td><strong>ARR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.214</td>
<td>-.264</td>
<td>.038</td>
<td>1</td>
<td>.625**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.136</td>
<td>.064</td>
<td>.795</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td><strong>PBP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.071</td>
<td>-.586**</td>
<td>-.241</td>
<td>.625**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.624</td>
<td>.000</td>
<td>.092</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

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

Source: (Research Findings, 2018)
4.5 Regression Analysis

ROE was regressed against capital budgeting techniques; NPV, IRR, ARR and PBP. The regression scrutiny was carried out at 5% significance level. The model summary statistics obtained is as shown in table 4.4 below. The R2 of 0.456 establishes that the capital budgeting techniques employed i.e. NPV, ARR, PBP and IRR explain 45.6 % of the deviations in financial performance. Other variables not covered in this research explain 54.4 % of the deviations in the financial performance of manufacturing firms listed in Kenya. A durbin-watson statistic of 1.662 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

Table 4.4: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.676</td>
<td>.456</td>
<td>.408</td>
<td>.488</td>
<td>1.662</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), NPV, IRR, ARR, PBP
b. Dependent Variable: ROE

Source: (Research Findings, 2018)

Table 4.5: Overall Model Significance

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>8.983</td>
<td>4</td>
<td>2.246</td>
<td>9.448</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>10.697</td>
<td>45</td>
<td>.238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19.680</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROE
b. Predictors: (Constant), NPV, IRR, ARR, IRR

Source: (Research Findings, 2018)
Table 4.5 gives the analysis of variance. From the results, the independent variables have a combined effect on ROE. This is inferred from the significance interval of 0.000 significant at 95% confidence level. The F statistic is 9.448 greater than F critical 2.578. Therefore, the independent variables being good joint predictors, the overall regression model can be used to predict ROE given the independent variables.

Table 4.6: Model Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-.005</td>
<td>.025</td>
<td>-.181</td>
</tr>
<tr>
<td></td>
<td>NPV</td>
<td>-.001</td>
<td>.007</td>
<td>-.029</td>
</tr>
<tr>
<td></td>
<td>IRR</td>
<td>.001</td>
<td>.005</td>
<td>.048</td>
</tr>
<tr>
<td></td>
<td>ARR</td>
<td>.006</td>
<td>.005</td>
<td>.268</td>
</tr>
<tr>
<td></td>
<td>PBP</td>
<td>-.003</td>
<td>.007</td>
<td>-.102</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROE

Source: (Research Findings, 2018)

The relationship between the capital budgeting variables, IRR and ARR with financial performance was found to be positive and non-statistically significant with p values of 0.867 and 0.171 respectively. NPV and PBP independent variables were found to have a negative and non-statistically significant relationship with ROE as depicted by their p values of 0.931 and 0.666 respectively.

The following regression equation was estimated:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \]

\[ \text{ROE} = -0.005 - 0.001 X_1 + 0.001 X_2 + 0.006 X_3 - 0.003 X_4 \]
Where;

\( \alpha = -0.005 \) depicts that where NPV, ARR, PBP & IRR are rated zero, then ROE would be -0.005

\( X_1 = -0.001 \) depicts that one unit change in NPV results in 0.015 decrease in units of ROE

\( X_2 = +0.001 \) depicts that one unit change in IRR results in 0.001 increase in units of ROE

\( X_3 = 0.006 \) depicts that one unit change in ARR results in 0.006 increase in units of ROE

\( X_4 = -0.003 \) depicts that one unit change in PBP results in 0.003 decrease in units of ROE

### 4.6 Discussions of Findings

The study sought to establish the effect of capital budgeting decisions on the financial performance of manufacturing firms listed in Kenya. The independent capital budgeting decisions variables included; NPV, IRR, ARR and PBP. The dependent variable financial performance was measured by return on equity. The study established that independent project decisions at listed manufacturing firms are based on NPV technique. The study revealed that NPV as a capital budgeting technique considers all cash flows during the life of the project. NPV is consistent with the concept of maximizing the shareholders’ wealth. The findings are consistent with Bierman and Harold (1993) who also found that 99% of the Fortune 500 companies used NPV, while 85% used IRR. The results of the regression model revealed a negative and insignificant association between NPV and ROE.
IRR and financial performance relationship was found to be positive and non-statistically significant. The study also revealed that independent project decisions were made using IRR appraisal technique which was the second most utilized technique after the NPV technique as it gives a percentage measure. IRR as an appraisal technique of capital budgeting however suffers from a number of inefficiencies. It was established from the study that IRR cannot handle non-conventional cash flows. Similarly, Farragher et al., (2001) found an insignificant positive relationship at a 0.1 level. The findings depart from Kiget (2014) findings. He found that the most utilized capital budgeting method was IRR followed by NPV technique while PI technique was third.

Regression results also revealed that ARR and financial performance of listed manufacturing firms were positively related. Also, the relationship was found to be non-statistically significant. Some companies prefer using ARR tool because of its ease of use and simplicity in its application. Also, the accounting data upon which it relies on can be easily accessed without much effort and thus making it a convenient capital budgeting tool. Moreover, ARR can be computed without relying on computers in addition to it using all the return arising from a capital investment (Mclaney, 2005). ARR use however, faces a number of limitations; it doesn’t not factor the time value of money, it’s universally accepted and uses accounting profits instead of cash flows in its computation making it highly subjective. The finding is consistent with that of Haka et al., (1985) who also found no significant relationship in the long term between sophisticated capital budgeting techniques and the market performance of companies.
Regression results also revealed that PBP and financial performance of listed manufacturing firms had a weak negative relationship. Klammer (1975) established that firms that registered good performance were using IRR and not PBP indicating a negative relationship. Also, McLaney (2005) was of the view that firms using PBP have an advantage over other firms using the other techniques. PBP affords them an advantage of identifying projects that can generate returns quickly in order to recover the costs expended on the projects. The PBP method thus remains a very popular method in practice, though not as a primary technique. Firms are able to identify projects that will generate returns in the shortest time possible. By this, the liquidity position of the firm is enhanced. Also, due to unforeseen risks in the future which may affect the return on the projects, the companies using PBP are able to minimize their exposure to these risks due to PBP use. Consequently, firms which value liquidity (and most Companies will) PBP will identify which ventures are consistent with this objective.

The model summary revealed that the independent variables: NPV, IRR, ARR and PBP explained 45.6% of the variations in financial performance as depicted by the R2 value. Thus, 54.4% of the variations in financial performance of manufacturing firms, occur as a result of other factors not discussed in the study. The model was found to be significantly fit since the p-value is 0.000. This endorses that total multiple regression model is significant statistically.
CHAPTER FIVE

DATA ANALYSIS, FINDINGS AND INTERPRETATION

5.1 Introduction

This chapter presents the summary of the research findings of the collected and analyzed data. The chapter also presents the discussion of the analyzed results. The chapter also looks at the conclusions of the study based on study objectives. There is also limitations, the recommendations of the study and areas for further research.

5.2 Summary of Findings

The study aimed to establish the effect of capital budgeting decisions on the financial performance of manufacturing firms listed at the Nairobi Security Exchange. The independent variables for the study were NPV, IRR, ARR and PBP and the dependent variables was ROE which measured financial performance. The study used annual data from 2012 to 2017 for the 9 listed manufacturing companies listed in Kenya.

From the results of correlation analysis, a weak negative correlation exists between NPV and financial performance. The correlation between IRR and financial performance was found to be weak and positive. The research also indicated that PBP had a weak and positive correlation with financial performance. ARR was found to have a weak positive correlation with financial performance. These findings are in tandem with that of Irungu (2014) who established that; PBP, NPV, ARR and IRR had a weak correlation with financial performance of commercial banks listed in Kenya.
The R-square of 0.456 implied that the independent variables could only account for 45.6% of changes in ROE. The remainder 54.4% is caused by other variables not covered in the study that also cause changes in the financial performance of manufacturing firms listed in Kenya. ANOVA results show that the F statistic was significant at 5% level with a p=0.000. Therefore the model was fit to explain the relationship between the selected variables.

The regression results showed that when all the selected independent variables (NPV, IRR, ARR and PBP) are rated zero, financial performance would be -0.005. A unit increase in IRR and ARR would result to an increase in financial performance by 0.001 and 0.006 respectively while a unit increase in NPV and PBP would cause financial performance of manufacturing firms to decrease by 0.001 and 0.003 respectively. Analysis of the model coefficients revealed that capital budgeting techniques (NPV, IRR, ARR and PBP) are not significant determinants of financial performance of listed manufacturing firms in Kenya.

The recurring negative and positive relationships mirrors the following studied; Klammer (1975) discovered that better performing firms were using PBP while poorly performing firms were using ARR. He also found a negative relationship between the capital budgeting techniques and financial performance of firms. Similarly, Pike (1984) also found that they were negatively and insignificantly related with the financial performance of firms. Haka et al., (1985) found that the techniques were insignificantly related to the market performance of firms in the long term. However, they found that there was evidence of a significant positive relationship with market performance in the short-run.
5.3 Conclusions

Based on the research outcomes, the study concludes that the financial performance of listed manufacturing companies in Kenya is not significantly affected by capital budgeting decisions (NPV, IRR, ARR and PBP). The study concludes that NPV and financial performance have a negative and insignificant relationship. The study also concludes that IRR has a positive and non-statistically significant relationship with the financial performance of manufacturing listed in Kenya. Also, the study concludes that ARR has a positive and non-statistically significant relationship with the financial performance of manufacturing firms listed in Kenya.

Finally, the study concludes that PBP has a negative and non-statistically significant relationship with the financial performance of manufacturing firms listed in Kenya. The researcher also concludes that firms using IRR perform better than firms using NPV, ARR and PBP. Haka et al., (1985) concurs with our findings, they were also of the view that the relationship between capital budgeting decisions and performance can be assumed to be weaker under environmental uncertainty.

Klammer (1973) also argued that the impact of the implementation of sophisticated capital budgeting procedures is gradual and hence short-run effects are not to be expected. Farragher et al., (2001) also found an insignificant negative relationship between capital budgeting techniques and financial performance. It is not necessarily true that capital budgeting decisions will lead to cash inflow and share maximization.
5.4 Recommendations

Managers feel that capital budgeting is at times implemented without adequate education to implementers and ill-fitting financial and operating structures. The study thus recommends that proper understanding of the demand placed by implementation of these projects on the resources of a firm should be well assessed before implementation. It is vital that the management of the companies immerse themselves in employee training and skill development especially in areas of capital budgeting and investments. Training consultants could be used to train the employees who will be advising the management on the best investment alternatives.

In addition, low levels of financial literacy can impact the degree to which companies use investment appraisal techniques. The government through the ministry of finance should broaden its efforts to ensure that a high level of financial literacy is universal to company managers. Government agencies such as NSE and capital markets authority should therefore organize training for newly listed companies.

Capital budgeting being identified as important in that it determines the financial performance of manufacturing firms should be developed to include non-financial aspects in evaluation of investments. Also, the organizations should venture more outside the organization tradition in evaluation of investments and use techniques which align more to the current organizational needs rather than what is relevant in the future. And finally, on-financial criterion should be equally considered in the capital budgeting process. To make performance targets more realistic, such factors should form part of the capital budgeting process.
5.5 Limitations of the Study

The target population was not easily accessed. This was hampered by company policies and bureaucracy regarding their information outflow. The formal procedure is that a document received should go through all the steps until the relevant officer ascertains that the information being sought can or cannot be given out. In some cases the researcher had to go through this to access to data. This was found to be too long. This seriously impeded the researcher’s effort to collect data.

Another potential limitation was the reliability of the data obtained. Inaccuracies could have resulted from the survey respondents misunderstanding the survey questions or terminologies used in capital budgeting. Indeed the researcher had to in many cases explain the meaning of some of the terminologies to the respondents who then could attempt to accord the right response.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized correlation involving two or additional variables may not hold.

5.6 Suggestions for Further Research

Further research can be undertaken considering a bigger sample size so as to produce more reliable results. Again, undertaking the same research would help confirm if the observation would have changed. A statistical analysis of capital budgeting decisions and growth to establish whether a technique used has any impact on the outcome.
This would require a case study where the project analyzed will be traced from the time of decision to execution of output and whether different techniques will yield to different growth rates.

Same studies can be done for a longer time period for the purpose of obtaining more improved and reliable findings. If possible more firms from the sectors should be included in the sample so as to increase reliability on the results. Capital budgeting decisions is a useful tool for growth and expansion and the overall financial performance of any firm. Further research is also required on the use of a different financial performance variable apart from ROE e.g. ROA.

This study was carried out in manufacturing firms in Kenya. The findings of the study cannot therefore be generalized to other industries for example banking, insurance and tourism sectors of the economy. Future studies should cover other industries to bring out specific inherent capital budgeting techniques that affect financial performance in these industries. Future studies should also be carried among the non-listed companies on Nairobi Security Exchange in specific segments for example agriculture segment.
REFERENCES


Wakiaga, P. (2016, June Monday). Manufacturing’s big winners in Treasury’s Shs 2.3trn budget Nairobi


APPENDICES

APPENDIX I: MANUFACTURING COMPANIES LISTED AT THE NAIROBI SECURITY EXCHANGE

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

Source; NSE (2018)
APPENDIX II: QUESTIONNAIRE

This questionnaire contains three parts and is to be filled in by the officers from the 9 manufacturing firms listed at the NSE who are involved in the capital budgeting procedures of those respective firms. Kindly provide responses to the questions in each part as objective as possible by either ticking (√) or marking (X) beside the most appropriate alternative. Your responses will be treated with utmost confidentiality.

PART I: GENERAL INFORMATION

Name: …………………………………………………………………………… (Optional)

Name of the Organization…………………………………………………………

Position held: ………………………………………………………………………

1. How long have you worked with this organization?

   a) Less than a year ( )

   b) 1 – 5 years ( )

   c) 5 – 10 years ( )

   d) Over 10 years ( )

PART II: INFORMATION ON CAPITAL BUDGETING

1. Does the company have a capital investment manual (written guidelines)?

   Yes ( ) No ( )

2. If yes, which year is the latest copy of the investment manual? ……………………
PART III: USE OF CAPITAL BUDGETING TECHNIQUES

1. Please indicate how frequently your company employs the following budget techniques for the period 2012-2017?

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2. Please state which of the following technique(s) does your company prefer when deciding which investments to undertake?

a) PBP ( )
b) ARR ( )
c) NPV ( )
d) IRR ( )

3. Has there been a time when the company changed from one budgetary technique to another?

Yes ( ) No ( )
## APPENDIX III: RAW DATA

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