AN INVESTIGATION INTO THE EXTENT OF APPLICATION OF
CAPITAL BUDGETING TECHNIQUES BY FOOD AND
BEVERAGE INDUSTRIES IN NAIROBI.

BY:

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FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION (MBA – FINANCE),
SCHOOL OF BUSINESS, KENYATTA UNIVERSITY.
DECLARATION

This research project is my original work and has not been presented for a degree in any other university or any other award.

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

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DEDICATION

This project is dedicated to my beloved husband Joseph and daughter Stephanie. Thank you so much for your moral advice and support. Your patience and understanding has made me go this far, however, it was through determination and hardwork. Our dear daughter, I have set the pace for you, kindly pick up the battle from where I will leave it. The battle may be tough but as they say, as the going gets tough, the tougher get going. Remember that the fear of God is the beginning of wisdom (Proverbs 1:7).
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LIST OF ABBREVIATIONS

ARR  Accounting Rate of Return
CAPM  Capital Assets Pricing Model
CEO  Chief Executive Officer
CF  Cash flow
CBT  Capital Budgeting Techniques
CFO  Chief Financial Officer
DCF  Discounted Cash flow
IRR  Internal Rate of Return
MBA  Masters of Business Administration
MV  Market Value
NPV  Net Present Value
SPSS  Statistical Package for Social Sciences
WACC  Weighted Average Cost of Capital
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1.2 DEFINITION OF TERMS

The terms capital budgeting and investment decisions are used interchangeably in the literature to refer to one and the same thing. Weston and Copeland (1988), define Capital Budgeting as the entire process of planning expenditures whose returns are expected to extend over a long period of time. They give the examples of capital outlays for land, buildings, equipment and permanent additions to working capital associated with plant expansion. They also consider advertising or promotion campaign or research and development programme as being capital budgeting expenditures since they are likely to have long-term impacts.

Lumby (1994) defines an investment decision as one ‘which involves the firm making a cash outlay with the aim of receiving, in return, future cash inflows. Decisions about buying a new machine, building a factory, extending a warehouse, improving a delivery service, instituting a staff training scheme or launching a new product line are all examples of the investment decisions that may be made by a firm.

From the two definitions capital budgeting can be considered as long-term investment decisions and therefore the two terms are used interchangeably in this study.
ABSTRACT

This study analyzed the extent of application of capital budgeting techniques on 30 food and beverage industries in Nairobi. The study focused on analyzing the capital budgeting techniques utilized in investment decisions, the reason for their use, factor that inhibit effective use of capital budgeting techniques, factors that they base the investment proposals on and to find out the Capital Projects undertaken recently. Primary data was collected using a semi-structured questionnaire and analyzed using descriptive statistics.

The results of the study showed that most food and beverage industries were locally owned and have been in existence for more than 20 years. The techniques that most finance managers were aware of and were mainly used included Payback Period and Net Present Value. Internal Rate of Return, Accounting Rate of Return and Profitability Index were the least used techniques. Most of the capital budgeting techniques used by the food and beverage industries were designed by the finance managers and outside consultants less than five years ago.

Most firms indicated that they were using the current capital budgeting techniques because they were accurate and reliable, easy in understanding and applying and easy in interpretation of results.
Easy and less costly to develop and detailed in analysis were least cited. For most firms, capital budgeting techniques were moderately used while for some few firms they were either widely or least used. From the results of the study the long-term investments carried out recently included:

Launching of new products, acquiring new manufacturing plant and machinery, expanding warehouses and computerizing operation. The results of the study showed that most firms keep on undertaking new investment projects.

As regards factors that inhibit effective application of capital budgeting techniques, availability of capital, economic life, risk of the project undertaken, determining the discount rate and estimating cash inflows were most cited.

Most firms indicated that implemented projects were reviewed at regular intervals while others cited once. Most projects were reviewed by the executive management.

A number of recommendations were made based on the findings of the study. Among them was that firms should practice continuous improvement, use information technology and educate and train their executive management. Also higher institutions of learning should encourage students to do research on investment decisions since they are very vital decisions for the survival of firms. A firm’s survival and profitability hinges on capital expenditure.
CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The field of capital budgeting and related matters remains a prime concern for financial theorists and business practitioners. For the former, it gives excellent opportunities for developing a practical positive theory based on a rational and quantitative framework. For the latter, the process of resource allocation probably constitutes the most vital decision taken by management, since many projects are not easily reversible and place the company on new paths leading to long-run survival or ultimate failure.

Capital Investment decisions have long-term effects and require heavy capital commitments, making them some of the most important decisions in an organization. To the firm, these decisions, which shape both the pattern and growth of future output, constitute one of the most demanding challenges confronting management, since in a large measure the future benefits are irrevocably determined by the effectiveness of today’s capital budgeting decisions.

The capital investment decision is essentially how much not to consume in the present in order that more can be consumed in the future. Managers of companies, who act as agents for the owners (shareholders) of the firm, must decide between paying out earnings in the form of dividends, which may be used for the present consumption, and retaining the earnings to invest in
productive opportunities that are expected to yield future consumption and to maximize shareholders' wealth. Managers of non-profit organizations try to maximize the expected utilities of contributors - those individuals who provide external funds. And public sector managers attempt to maximize the expected utility of their constituencies. Even though investment decisions affect every aspect of the economy, individuals as well as organizations, this study, however, focuses on investment decisions in a corporate set up.

The Capital Budgeting process is quite complex requiring good strategic management, careful planning and often, large outlays for research and development. Moreover, some very difficult measurement problems are involved: the sales and costs associated with particular projects must be estimated frequently for many years into the future, in the face of uncertainty. Finally, some difficult conceptual and empirical problems arise over the methods of calculating rates of return and the cost of capital. (Weston and Copeland, 1988).

Hastie (1974) points out that while, the academic community is preoccupied with refining capital expenditure analyses, business practitioners are more concerned with improving decision making. Studies in the early 1960s indicated that relatively few firms were using discounted cash flow (DCF) and other refined techniques to measure the benefits of proposed capital expenditures. By the late 1960s, and early 1970s, studies showed increasing use. However, Klammer's (1972) study showed that as late as 1970, 43 percent of the firms in his study were not using DCF techniques. A more recent study done by Graham and Harvey (2001) indicates that the Net Present Value (NPV) project evaluation method is becoming dramatically more important and Capital Asset Pricing Model (CAPM) is also being widely used. However, firms continue to use company
wide rather than project specific discount rates to evaluate projects, an indication that practitioners might not be applying the CAPM and NPV rules correctly. The study also reveals that Chief Financial Officers (CFOs) pay very little attention to risk factors based on momentum and book-to-market value. These results continue to puzzle researchers and academicians.

Hastie (1974), suggests that the use of refined evaluation techniques should not be discarded but rather an improvement in investment decision making should be done through determining the alternative investments available, weighing the strategic aspects of the alternatives, collecting data and information on the viable alternatives, developing assumptions and calculating the incremental income and cash flow benefits, measuring the net benefits, assessing the effect that different assumptions have on the project’s measured results, analyzing the risks of the project, weighing the benefits and strategic purpose of the project against its risks and the constraints of the corporation, and communicating the relevant information to top management in a manner that facilitates effective decision making.

1.2 STATEMENT OF THE PROBLEM

Investment decisions are vital decisions that an organization has to make. A company’s survival and profitability hinges on capital expenditures. There are various capital budgeting techniques that can be used to analyze investment proposals. The purpose of the study was to investigate the extent of application of capital budgeting techniques in investment proposals by 30 food and beverage industries located in Nairobi. The study also investigated factors that inhibit effective application of capital budgeting techniques.
1.3 OBJECTIVES OF THE STUDY

The general objective of the study was to investigate the extent of application of capital budgeting techniques by the food and beverage industries located in Nairobi.

Other objectives include;

i) To determine the factors that inhibit proper application of capital budgeting techniques.

ii) To document the capital budgeting techniques in use.

iii) To investigate reasons for use of particular capital budgeting techniques.

iv) To find out long-term investments carried out recently.

1.4 RESEARCH QUESTIONS

The study sought to answer the following questions:-

(i) Are capital budgeting techniques utilized in making investment decisions?

(ii) Which factors inhibit proper application of capital budgeting techniques?

(iii) Which capital budgeting techniques are commonly used?

(iv) Which long-term investments have been carried out recently?
1.5 SIGNIFICANCE OF THE STUDY

This study has the following significance:

1. It is of importance to scholars who may wish to pursue further studies in the area of capital budgeting.
2. It gives an insight to management, especially Finance Managers, of organizations into the most appropriate capital budgeting techniques to apply in order to maximize the shareholders’ wealth.
3. It provides a practical reference to academic institutions, especially in Kenya, and can assist them in determining whether they have been putting the right emphasis on capital budgeting techniques and which areas to improve on in their capital budgeting training.

1.6 SCOPE OF THE STUDY

The study was specifically focused on investigating the extent of application of capital budgeting techniques in investment proposals by 30 food and beverage industries located in Nairobi.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

An efficient allocation of capital is the most important finance function in the modern times. It involves decisions to commit the firm's funds to the long-term assets. Capital budgeting or investment decisions are of considerable importance to the firm since they tend to determine its value by influencing its growth, profitability and risk.

2.2 NATURE OF INVESTMENT DECISIONS

The investment decisions of a firm are generally known as the capital budgeting, or capital expenditure decisions. A capital budgeting decision may be defined as the firm's decision to invest its current funds most efficiently in the long-term assets in anticipation of an expected flow of benefits over a series of years. The long-term assets are those that affect the firm's operations beyond the one-year period. The firm's investment decisions would generally include expansion, acquisition, modernization and replacement of the long-term assets. Sale of a division or business (divestment) is also as an investment decision. Decisions like the change in the methods of sales distribution, or an advertisement campaign or a research and development programme have long-term implications for the firm's expenditure and benefits, and therefore should also be evaluated as investment decisions. It is important to note that investment in the long-term assets invariably requires large funds to be tied up in the current
assets such as inventories and receivables. As such, investment in fixed and current assets is one single activity.

The following are the features of investment decisions:

- The exchange of current funds for future benefits.
- The funds are invested in long-term assets.
- The future benefits will occur to the firm over a series of years.

It is significant to emphasize that expenditure and benefits of an investment should be measured in cash. In the investment analysis, it is cash flow, which is important, not the accounting profit. It may also be pointed out that investment decisions affect the firm's value. The firm's value will increase if investments are profitable and add to the shareholders' wealth. Thus, investments should be evaluated on the basis of a criterion, which is compatible with the objective of the shareholders' wealth if it yields benefits in excess of the minimum benefits as per the opportunity cost of capital.

2.3 IMPORTANCE OF INVESTMENT DECISIONS

As stated by I.M Pandey (2003) decisions require special attention because of the following reasons:

They influence the firm's growth in the long run.
- They involve commitment of large amount of funds.
- They affect the risk of the firm.
- They are irreversible, or reversible at substantial loss.
- They are among the most difficult decisions to make.
Growth

The effects of investment decisions extend into future and have to be endured for a longer period than the consequences of the current operating expenditure. A firm’s decision to invest in long-term assets has a decisive influence on the rate and direction of its growth. A wrong decision can prove disastrous for the continued survival of the firm; unwanted unprofitable expansion of assets will result in heavy operating costs to the firm. On the other hand, inadequate investment in assets would make it difficult for the firm to compete successfully and maintain its market share.

Risk

A long-term commitment of funds may also change risk complexity of the firm. If the adoption of an investment increases average gain but causes frequent fluctuations in its earnings, the firm will become more risky. Thus, investment decisions shape the basis character of a firm.

Funding

Investment decisions generally involve large amounts of funds, which make it imperative for the firm to plan programmes very carefully and make an advance arrangement for procuring finances internally or externally.
Irreversibility

Most investment decisions are irreversible. It is difficult to find a market for such capital items once they had been acquired. The firm will incur heavy losses if such assets are scrapped.

Complexity

Investment decisions are among the firm's most difficult decisions. They are an assessment of future events, which are difficult to predict. It is really a complex problem to correctly estimate the future cash flows of an investment. Economic, political, social and technological forces cause the uncertainty in cash flow estimation.

2.4 TYPES OF INVESTMENT DECISIONS

Types

There are many ways to classify investments as stated by Mark Ross (1995). One classification is as follows:

- Expansion of existing businesses
- Expansion of new business
- Replacement and modernization

2.4.1 Expansion and Diversification

A new company may add capacity to its existing product lines to fund existing operations. It is an example of related diversification. A firm may expand its activities in a new business. Expansion of a new business requires investment in new products and a new kind of production activity within the firm. If a
packaging manufacturing company invests in a new plant and machinery to produce ball bearings, which the firm has not manufactured before, this represents expansion of new business or unrelated diversification. Sometimes a company acquires existing firms to expand its business. In either case, the firm makes investment in the expectation of additional revenue. Investments in existing or new products may also be called as revenue-expansion investments.

2.4.2 Replacement and modernization

The main objective of modernization and replacements is to improve operating efficiency and reduce costs. Cost saving will reflect in increased profits, but the firm’s revenue may remain unchanged. Assets become outdated and obsolete with technological changes. The firm must decide to replace those assets with new assets that operate more economically. If a cement company changes from semi-automatic drying equipment to fully automatic drying equipment, it is an example of modernization and replacement. Replacement decision help to introduce more efficient and economical assets and therefore, are also called cost reduction investments. However, replacement decisions that involve substantial modernization and technological improvements expand revenues as well as reduce costs.

Another useful way to classify investments is as follows:

- Mutually exclusive investments
- Independent investments
- Contingent investments.
Mutually Exclusive Investments

Mutually exclusive investments serve the same purpose and compete with each other. If one investment is undertaken, others will have to be excluded. A company may, for example, either use a more labour-intensive, semi-automatic machine, or employ a more capital-intensive, highly automatic machine for production. Choosing the semi-automatic machine precludes the acceptance of the highly automatic machine.

Independent Investments

Independent investments serve different purposes and do not compete with each other. For example, a heavy engineering company may be considering expansion of its plant capacity to manufacture additional excavators and addition of new production facilities to manufacture a new product-light commercial vehicle. Depending on their profitability and availability of funds, the company can undertake both investments.

Contingent Investments

Contingent investments are dependent projects; the choice of one investment necessitates undertaking one or more other investments. For example, if a company decides to build a factory in a remote, backward area, it may have to invest in houses, roads, hospitals, schools etc., for employees to attract the work force. Thus, building of factory also requires investment in facilities for employees. The total expenditure will be treated as one single investment.
2.5 REVIEW OF THE CAPITAL BUDGETING PROCESS

2.5.1 Investment decisions and shareholders' wealth maximization

As stated by Lumby (1994), in order to help in making investment decisions, and to ensure that they are consistent with each other, a common method of appraisal is required which can be applied equally to the whole spectrum of investment decisions and which should, help to decide whether any particular investment will assist the company in maximizing shareholders' wealth.

As advanced by Hargitay and Shi-Ming Yu, (1993), in investment, funds are committed to various ventures which promise attractive returns at the price of risking a partial or total loss of the funds without an absolute guarantee of the size of receipt of return. Investment, therefore, represent certain sacrifices for uncertain benefits. Thus investment has two principal aspects: - anticipated return (profitability) and risk (stability). Empirical evidence indicates that management is generally concerned with these two aspects. However, as argued by Haim and Marshall (1994), these concerns cannot be considered in isolation. Maximising profit implies that future profits are known with certainty, which is not realistic. On the other hand maximizing stability implies avoidance of risk, and this can lead to less profit, as firms would avoid investing in highly profitable projects if they entail high risks. In the real world, uncertainty prevails, the firm must consider risk as well as profits, and therefore choose that combination of risk and profit, which maximizes the market value of its stock. For the purpose of capital budgeting this means that other things being constant, management will strive to secure the highest net return on its capital investments, which is compatible with the risks incurred.

The goal of a firm and that of capital budgeting is the same, that of maximization of the market value of its existing common stock or alternatively stated the
maximization of its shareholders wealth. In many models, it has been shown that the shareholder's wealth is the discounted value of after-tax cash flows paid out by the firm. It has also been shown that the after-tax cash flows available for consumption is the same as the stream of dividends, paid to shareholders (Weston & Copeland, [1992]) as shown in the simple model below:

\[
S_0 = \text{Market Value (MV) of the firm} \\
\text{Div}_t = \text{Cash Flows (CFs) of firms} \\
K_s = \text{Cost of capital for the firm}
\]

The discounted value of the stream of dividend is

\[
S_0 = \sum_{t=0}^{\infty} \frac{\text{Div}_t}{(1 + K_s)^t}
\]

Where \( S_0 \) is the present value of shareholders' wealth, and \( K_s \) is the market-determined rate of return on equity capital (common stocks).

But, dividends are the residual cash flows of the firm after deducting all costs of operation and new investments from revenues written as:

\[
\text{Div}_t = \text{Rev}_t - \text{Costs}_t - I_t
\]

Therefore, rewriting shareholders' wealth,

\[
S_0 = \sum_{t=0}^{\infty} \frac{\text{Rev}_t - \text{Costs}_t - I_t}{(1 + K_s)^t}
\]
However, as advanced by Jensen and Meckling (1976), there is a difference between ownership and control, and conflicts of interest do arise. There is therefore no reason to believe that the manager, who serves as an agent for the owners, will always act in the best interest of the shareholders. However, in investment decisions we assume that managers always make decisions that maximize the wealth of the firm’s shareholders, and find and select the best set of investment projects to accomplish this objective. Managers can achieve this by following a systematic Capital Budgeting Process, which consists of at least five managerial activities:

- Continuous and creative search for investment opportunities;
- Forecasting the supply and cost of funds for investment purposes;
- Estimating each project’s cash flows and other benefits;
- Ranking and choosing among competing projects;
- Post-auditing already committed investments.

### 2.5.2 Continuous and Creative Search for Investment Opportunities

Haynes and Solomon Jr. (1962), point out that the preliminary process of capital budgeting being, (a) search for and discovery of investment opportunities (b) collection of information about alternatives and (c) the application of incremental reasoning to the collected information, are very important in setting up the stage for Capital Budgeting decisions.

"In the absence of a creative search for new investment opportunities, even the most sophisticated evaluation techniques are worthless ..." [Haim and Marshall (1994)]. Management ought to set aside time for search activity - search for alternatives and search for information about the alternatives. Some managers
fail to take advantage of investment opportunities because of inadequate information or pressure of routine duties. The collection of information is not enough. It is necessary to separate relevant information from the irrelevant and to organize the data in a meaningful form. In other words there ought to be a procedure for identifying and generating investment proposals as well as gathering and transferring information on alternative courses of action for the purposes of decision-making.

To facilitate this information search process, develop standardized estimation and administration procedures, Haim and Marshal (1994) suggest the following basis of classification of investment proposals;

1. By project size - the amount of cash required to implement project: major projects, regular capital expenditures and small proposals.
2. By degree of dependence - mutually exclusive projects, complements, substitutes.
3. By type of cash flow.

Projects can also be classified by the key motives for making the capital expenditure. As explained by Gitman (1997) these motives include:

**Expansion:** - For instance, expanding the level of operations - usually through acquisition of fixed assets. Growing firms often find it necessary to acquire new fixed assets rapidly.

**Replacement:** - As a firm’s growth slows and it reaches maturity, most of its capital expenditures will be for the worn-out assets. Each time a machine
requires a major repair, the outlay for the repair should be evaluated in terms of
the outlay to replace the machine and the benefits of replacement.

Renewal: - Renewal, often an alternative to replacement, may involve rebuilding,
overhauling, retrofitting an existing machine or facility.

Other purposes: - Some capital expenditures do not result in the acquisition or
transformation of tangible fixed assets shown on the firm's balance sheet.
Instead, they involve a long-term commitment of funds by the firm in
expectation of a future return. These expenditures include outlays for
advertising, research and development, management consulting, and new
products.

The investment proposals can be based on market research, technical and
engineering methods studies, employee suggestions, and significant changes in
the competitive environment, amongst other techniques.

An organization should also have a capital budgeting policy or an administrative
framework, which facilitates the gathering and transferring of relevant
information on alternative courses of action both for purposes of decision-
making. The framework can include the following information;

(i) How to estimate the amount of funds needed for a project by use of a
combination of past performance and historical data, future expectations,
and recommendation of all interested departments of the firm;
(ii) Origination of investment proposals
(iii) The approval process: depending on the size and nature of investment;
(iv) The planning horizon: short, medium or long term
Investment opportunities have to be identified or created; they do not occur automatically. According to Van Horne (1997) suggests that investment proposals of various types may originate at different levels within a firm. Most proposals, in the nature of cost reduction or replacement or process or product improvements take place at plant level. The contribution of top management in generating investment ideas is generally confined to expansion or diversification projects. The proposals may originate systematically or haphazardly in a firm. The proposal for adding a new product may emanate from the marketing department or from the plant manager who thinks of a better way of utilizing idle capacity. Suggestions for replacing an old machine or improving the production technique may arise at the factory level. In view of the fact that enough investment proposals should be generated to employ the firm’s funds fully well and efficiently, a systematic procedure the firm’s funds fully well and efficiently, a systematic procedure for generating proposals may be evolved by a firm.

The approval process varies from firm to firm. The actual cash outlay and the importance of a capital expenditure determines the organizational level at which the expenditure decision is made, [Gitman (1997)].

2.5.3 Forecasting the supply and cost of funds for investment purposes

When financing new projects, should the firm follow the firm’s optimal capital structure? Should firms maintain and have an optimal capital structure? As advanced by Modigliani and Miller (1958), the type of instrument used to finance an investment project is irrelevant to the question of whether or not the investment is worthwhile. This does not mean that the owners (or the managers)
have no grounds whatsoever for preferring one financing plan to another: or that there are no other policy or technical issues in finance at the level of the firm.

Several theories have been advanced to explain the relevance of capital structure, and whether there exists an optimal structure. These theories include, the capital structure irrelevance theory advanced by Modigiliani and Miller (1958, 1963, 1977), the static trade-off framework and the pecking order framework explained by Myers (1984) and Jensen and Meckling (1976) theory of effect of Agency Costs on Capital Structure. These theories are not discussed in detail as they are beyond the scope of this study. Haim and Marshall (1994) propose that, if we assume that the goal of the firm is to maximize its market value, it follows that the firm should strive to achieve that financing mix which it believes to be optimal in the long run. This implies that the firm should finance each project in the same proportions as its optimal (target) capital structure.

Empirical evidence however, shows that even a firm which has set a target financial structure will tend to deviate from this optimal mix from time to time, because practical considerations (floatation costs, market considerations etc) make the alternative of raising capital each year by issuing a financing ‘package’, in fixed proportions of debt and equity undesirable. These temporary deviations from the long-run policy should be ignored, but this does not mean that the firm should not re-examine from time to time its long-term policy.

Having seen that the firm should try to follow its optimal capital structure when financing new investments, we now turn to how the firm determines the minimum required rate of return on the new project. Dean (1951) recommends that the firm make investment decisions by looking to the capital markets for the firm’s cost of capital, accepting each project with an internal rate of return that exceeds this market-determined cost of capital. This point is well explained by
Weston and Copeland (1992), that, the firm essentially receives its investment funds from two classes of investors; creditors and shareholders, providing debt and equity capital respectively. Both groups expect to receive a rate of return that compensates them for the level of risk they accept. Therefore projects undertaken by the firm must earn enough cash flow to provide the required rate of return to creditors, repayment of the face amount of debt, and payment of expected dividends to shareholders. In other words the shareholders will require the rate of return on new projects to be greater than the opportunity cost of the funds supplied by them and the creditors. Only when cash flows exceed these amounts will there be any gain on shareholder's wealth. A positive NPV is achieved only after creditors and shareholders have received their expected rates of return. The Cost of Capital is the minimum risk-adjusted rate of return that a project must earn in order to be acceptable to shareholders.

The cost of capital to be used in this case is the firm’s Weighted Average Cost of Capital as it reflects the costs of the individual sources of funds, weighted by their share on the firm’s capital structure. It is the appropriate discount rate to use since it ensures that the value of the existing owner’s equity will be maximized. Setting a lower rate, would induce the firm to accept projects which are not in the existing shareholders best interest; setting the rate above the Weighted Average, on the other hand, would lead the firm to forego projects whose acceptance would increase the value of the existing shareholders’ equity.

The Weighted Average Cost of Capital (k = WACC) is the after-tax cost of debt, \( k_b(1 - t_c) \), multiplied by the percentage of the market value of the firm owned by creditors, \([B/(B + S)]\), plus the cost of equity, \( k_s \), multiplied by the percentage of the firm’s value owned by shareholders, \([S/(B+S)]\).
\[ K = \text{WACC} = k_b(1 - t_c) \frac{B}{B + S} + k_s \frac{S}{B + S} \]

\( t_c \) is the firm’s marginal tax rate.

However, as pointed out by Haim and Marshall (1994), there is a distinction between the firm’s cost of capital and specific project’s cost of capital, which varies from one project to another in accordance with the project’s risk profile. The firm’s cost of capital which is the Weighted Average Cost of Capital could be employed to evaluate a project only in cases where the risk profile of the new project is a “carbon copy” of the risk profile of the firm. Haim and Marshall (1994) argue that it is difficult, if not impossible, to estimate a separate cost of capital for each individual project. Thus, it is common to estimate the weighted average cost of capital of the firm as a first approximation and adjust this to reflect the specific risk profile of the project under consideration.

Haim and Marshall (1994) point out that it is crucial to recognize that the firm’s costs of specific sources of financing are neither constant over time nor independent of the firm’s overall financial strategy. The costs of capital are affected by the following risk factors - financial leverage risk and the firm’s economic or business risk. The greater the risk the larger will be the required rate of return and therefore the higher will be the financing cost. Each specific cost component is composed of the risk less interest rate (representing the time value of money) plus a risk premium. This risk premium, in turn, is determined by the firm’s economic risk (which exists even when financial leverage is zero) plus its financial risk. Thus each specific source can be decomposed into two parts:
Ki = r + BRP + FRP

Where:

Ki = ith cost component
r = risk less interest rate
BRP = business risk premium
FRP = financial risk premium

The Capital Assets Pricing Model, developed almost simultaneously by Sharpe (1963, 1964), and Treynor (1961) offers a solution to incorporating the above risk factors in the cost of capital.

CAPM may be written as

\[ E(R_j) = R_f + [E(R_m) - R_f]B_j \]

Where:

\[ E(R_j) \] = the expected rate of return on asset j,
\[ r_f \] = the (constant) risk-free rate,
\[ E(R_m) \] = the expected rate of return on the market portfolio,
\[ B_j \] = \frac{COV(R_j, R_m)}{VAR(R_m)}.

Incorporating CAPM into the Cost of Capital the various components of Cost of Capital are determined as follows:

Cost of debt

\[ k_b = R_f + [E(R_m) - R_f]B_b \]

Cost of Unlevered equity

\[ p = R_f + [E(R_m) - R_f]B_u \]
Cost of Levered equity

\[ k_s = R_f + [E(R_m) - R_f]B_f \]

WACC for the firm

\[ WACC = k_b(1 - t_c)B/B + S + k_s S/B+S \]

When using CAPM to find the Weighted Average Cost of Capital, the focus should be on the risk (beta) of the project and not the risk (beta risk) of the firm that is undertaking it. Thus the company’s cost of capital is irrelevant while considering a project whose beta risk is very different from those of the projects that currently constitute the company.

Unfortunately, the implementation of CAPM in practice is complicated. By its very nature, the investment in physical assets requires a multi period analysis, the capital assets pricing model is a one period model. Bogue and Roll (1974) analysed capital budgeting of risky projects in a multi period framework and concluded that it may be incorrect to discount cash flows by using a single-period risk-adjusted discount rate. The Arbitrage Pricing Model (APT) derived by Ross (1976) offers a testable alternative to the Capital Assets Pricing Model. The CAPM predicts that security rates of return will be linearly related to a single common – factor, the rate of return on the market portfolio. The Arbitrage Pricing Model allows the use of many factors, not just one, to explain security returns. The APT assumes that the rate of return on any security is a linear function of k factors as shown below:

\[ R_i = E(R_i) + b_{i1}F_1 + \ldots + b_{ik}F_k + I \]

Where:

- \( R_i \) = the random rate of return on the ith asset,
- \( E(R_i) \) = the expected rate of return on the ith asset,
the sensitivity of the ith asset's returns to the kth factor,

\[ b_{ik} = \text{the sensitivity of the ith asset's returns to the kth factor,} \]

\[ F_k = \text{the mean zero kth factor common to the returns of all assets under consideration.} \]

\[ I = \text{a random zero mean noise term of the ith assets.} \]

### 2.5.4 Estimating each project's cash flows and other benefits

From the inception of the investment proposal, the expected costs and revenues generated by the project must be estimated. Van Horne (1997) reasons that it is cash not income that is central to all decisions of the firm. Thus, whatever benefits expected from a project, are expressed in terms of cash flows rather than income. The firm invests cash now in the hope of receiving cash returns in a greater amount in the future. Only cash receipts can be re-invested in the firm or paid to shareholders in the form of dividends.

#### The Incremental Cash flows Principle

Haim and Marshall (1994) explain this principle as follows; that a project should be evaluated by considering all of the cash inflows and outflows induced by the investment. It follows that attention must be given to the magnitude and timing of cash flows, rather than to the accounting concepts of income and expenses. In order to properly appraise an investment opportunity, we have to appraise all the cash flows that arise either directly or indirectly as a result of the project. This is the principle of incremental cash flows. Therefore when determining the cash flow for an investment project the following should be taken into consideration;
All costs incurred (and revenues generated) prior to the investment appraisal decision should be excluded. They are sunk costs, in that they are unaffected by the investment decision under appraisal.

Deduct the initial investment outlay when it is incurred because that is when the actual cash flow occurs. Since the capital cost is fully taken into account by deducting the initial investment outlay from the project’s cash flow, depreciation charges should be ignored, deducting them would amount to double counting.

Ignore all financing cash flows (e.g. interest charges, loan repayment, dividends etc) and all their tax effects (e.g. interest tax relief and advance corporation tax (ACT). This is because these are all implicitly taken into account through the discounting process.

Ignore all non-incremental cash flows. Only those cash flows that arise because of the project should be included in an NPV analysis. Any cash flow that would arise whether or not the project was undertaken should be excluded.

The ‘opportunity’ or ‘alternative’ costs, and not just the direct outlay costs, must be taken into consideration.

Sometimes, at the end of the project’s life, assets have a positive value called salvage value. This valued should be incorporated into the cash flows.

The effect of inflation - The Fisher Effect:

Lumby (1994) gives a simple definition of inflation as being a situation where prices in the economy are, in general, rising over time. This may have effect on the cash flows and discount rates. This effect as explained by Weston and
Copeland (1992), is reflected in the required rate of return on the project or on the applicable cost of capital for the project – a relationship they acknowledge as having been recognized in financial economics and known as the Fisher effect.

This is expressed as follows:

\[
\left( \frac{1 + \text{Real Interest rate}}{1 + \text{General rate of inflation}} \right) = \left( \frac{1 + \text{Market interest rate}}{1 + \text{Market interest rate}} \right)
\]

They explain further that, the market data utilized in the estimated current capital costs will include a premium for anticipated inflation. But while the market remembers to include an adjustment for inflation in the discount rate factor, the cash flow estimates used by the firm in the Capital Budgeting analysis may fail to include an element to reflect future inflation. Sound analysis requires that the anticipated inflation rate be taken into account in the cash flow estimates. Given that the cost of capital (observed using market rates of return) already includes expected inflation, the decision maker can correct for inflation either (a) by adding an estimate of inflation to the cash flows or (b) by not including an adjustment for inflation in the cash flows and removing an inflation factor from the market rate.

**The effect of Taxation:**

In the appraisal of an investment project, what is of importance is the cash flows that will be generated by the project, and that are available for shareholders. Corporate taxes are a cash outflow and must be taken into account when evaluating a project’s desirability. Therefore as far as investment appraisal is concerned, we would wish to evaluate the after-tax cash flows of a project. This approach is well explained by Lumby (1994) and Weston and Copeland (1992).
Lumby (1994) states the following tax impacts on project appraisal:

- Tax relief on capital expenditure
- Tax charge on the project’s profit
- Tax relief on debt interest and or advance corporate tax liability caused by dividends. This impact is ignored since it is implicitly taken into account through the discounting process.

He argues that considering the above three factors, the approach taken to project appraisal is to evaluate the after-tax cash flows using the after-tax discount rate. The after-tax project cash flows taken account of the capital expenditure tax relief and the tax charge on the project’s profit. The third tax impact is taken into account through the after-tax discount rate.

Weston and Copeland (1992) define cash flows for capital budgeting purposes as free operating cash flows minus taxes on free operating cash flows.

They argue that cash flows for capital budgeting purposes can be thought of as, the after-tax cash flows the firm would have if it had not debt. Interest expenses and their tax shield are not included in the definition of cash flow for capital budgeting purposes. The reason is that when we discount at the weighted average cost of capital we are implicitly assuming that the project will return the expected interest payments to creditors and the expected dividends to shareholders. Hence inclusion of interest payments (or dividends) as a cash flow to be discounted would be double counting.
Definition of free cash flows shows what the firm will earn after taxes, assuming that it has no debt capital. Thus changes in the firm's debt-equity ratio have no effect on the definition of cash flows for capital budgeting purposes. The effect of financial decisions (e.g., changes in the ratio of debt to equity) "is reflected in the firm's weighted average cost of capital.

2.6.5 Ranking and choosing among competing project

There are several techniques as suggested in finance literature (Brealey and Myers [1996]) that managers can employ in evaluating projects. The best technique will maximize shareholders' wealth, consider all cash flows, discount cash flows at the opportunity cost of funds, select from a set of mutually exclusive projects the one that maximizes shareholder's wealth and consider one project independently from all others (this is known as the value-additivity principle).

There are five widely used capital budgeting techniques: These includes the payback period method, the accounting rate of return, the Net Present Value, and the Internal Rate of Return, profitability index.

The Payback and the Accounting Rate of return methods are referred to as the traditional capital budgeting techniques while the others are discounted cash flow methods.
The Payback Period Method

The payback period for a project is simply the number of years it takes to recover the initial cash outlay on a project. If managers were adhering strictly to the payback period method, they would choose projects with the shortest payback period. This method is popular with managers due to the fact that it is quick and simple to calculate, readily understood by management, it is thought to lead to selection of the less risky project in mutually exclusive decision situations, saves management the trouble of having to forecast cash flows over the whole of a project’s life and it is a convenient method to use in capital rationing situations. However, this method does not consider all cash flows and fails to discount the cash flows.

The Accounting Rate of Return

The Accounting Rate of Return (ARR) is the average after-tax profit divided by the initial cash outlay. Using this method, managers would choose projects with the highest Accounting Rate of Return. This method has the advantage of using the familiar percentage concept and it evaluates projects on the basis of profitability. However, this method uses accounting profits instead of cash flows and it does not consider the time value of money.

The Net Present Value and the Internal Rate of Return methods are referred to as discounted cash flow approaches. The fact that money has a time value (i.e. an opportunity cost in terms of rate of interest) means that cash flows that arise at different points in time cannot be compared directly but must first be converted to common point of time (usually to the present value). This can be achieved by use of either of these two approaches.
Net Present Value

The Net Present Value (NPV) criterion will accept projects that have an NPV greater than zero. The NPV is computed by discounting the cash flow at the firm's opportunity cost of capital. The equation for Net Present Value is,

\[
NPV = \sum_{t=1}^{N} \frac{NCF_t}{(1 + K)^t}
\]

Where \( NCF_t \) is the net cash flow in time period \( t \),

\( I_0 \) is the Initial cash outlay

\( K \) is the firm's Weighted Average Cost of Capital,

\( N \) is the number of years in the project.

Internal Rate of Return

The rate of return on a project is generally called the Internal Rate of Return (IRR). It is the discount rate that equates the present value of cash inflows with the present value of cash outlays. In other words, it is the rate that makes the computed NPV exactly zero. Hence this is the rate of return on invested capital that the project is returning to the firm.

\[
NPV = 0 = \sum_{t=1}^{N} \frac{NCF_t}{(1 + IRR)^t}
\]

If managers use the IRR criterion and the projects are independent, they would accept any project that has an IRR greater than the opportunity cost of capital.
Analysis done by Fisher (1907), (1930) and Lutz and Lutz (1951) and subsequently by Lorie and Savage (1955) and Hirshleifer (1958) indicate deficiencies in the internal rate of return criteria. First it does not obey the value-additivity principle, and consequently managers who use the IRR rule cannot consider projects independently of each other. Second, the IRR rule assumes that funds invested in projects have opportunity costs equal to the IRR for the project. This implicit reinvestment rate assumption violates the requirement that cash flows be discounted at the market-determined opportunity cost of capital. Finally, the IRR rule can lead to multiple rates of return whenever the sign of cash flows changes more than once. They offer the Net Present Value criterion as a solution. The NPV rule directs the manager to discount project cash flows at the market-based cost of capital and to accept all projects with positive discounted values.

The NPV rule avoids all the problems the IRR is heir to. It obeys the value-additivity principle, it correctly discounts at the opportunity cost of funds, and most important, it is precisely the same thing as maximizing the shareholders wealth i.e. maximizing discounted cash flows provided by investment projects.

Hertz (1963) reasons that much effort has been applied to the development of ways to improve our ability to discriminate among investment alternatives. The focus of all of these investigations has been to sharpen the definition of the value of capital investments to the company and the discounted cash flow methods has been resolved as a reasonable means of calculating this value, the rate of return. The fact is that, no matter what mathematics are used, each of the variables entering into the calculation of rate of return is subject to a high level of uncertainty. The “expected” rate of return represents only a few points on a continuous curve of possible combinations of future happenings. A number of efforts to cope with uncertainty have been advanced. Some of these include;
i) Sensitivity Analysis
This focuses on determining by how much the NPV of a project will change in response to a given change in input variable, holding other things constant for instance, change in price, change in cost of capital, change in tax etc.

ii) Scenario Analysis
This considers both the sensitivity of NPV to changes in key variables as well as the range of likely variable values. Under this approach managers assess various possibilities which are grouped.

iii) Decision Tree Analysis
This is suitable for use in a multi-stage or sequential decision where more than one variable may be uncertain and also the value of some variable may be dependent on value of other variables. Decision trees are designed to illustrate the full range of alternatives that can occur. Its logical analysis of a problem enables a complete strategy to be drawn up to cover all eventualities.

iv) Simulation
In practice it may be necessary to produce separate possibilities for all the alternative variables affecting a project for example, alternative sales revenue outcomes, different items of costs and so on. Consequently, a decision tree can consist of thousands of branches. In addition, the cash flows may be correlated for over the years, for example, if a new product is successful in the early years then it is also likely to be successful in later years. This situation becomes too complex to use a simple decision trees analysis and this problem can be overcome by use of simulation analysis
with the aid of a computer. To carry out the analysis, a company must follow three steps:

i. Estimate the range of values for each of the factors (e.g., range of selling price, sales growth rate, and so on) and within that range the likelihood of occurrence of each value.

ii. Select at random from the distribution of values for each factor one particular value. Then combine the values of all the factors and compute the rate of return (or present value) from that combination.

iii. Do this over and over again to define and evaluate the odds of the occurrence of each possible rate of return.

Other complex models of dealing with capital budgeting under uncertainty acknowledged at this point but not discussed in detail include, models developed by Bogue and Roll (1974) and Fama (1977); Adjusting the risk adjusted discount rate when comparing costs (rather than total income) data for mutually exclusive projects; the abandonment problem which deals with how to evaluate the residual value of investment assets and the application of the Option Pricing Models.

2.5.6 Post-auditing already committed investments

The post-completion of capital investment projects is one stage of the decision-making process which is often overlooked. Strictly speaking, the post-audit is not part of the current decision-making process since it refers to implemented projects. However, a systematic program of evaluating past decisions can contribute to the improvement of current decision-making by analyzing the patterns of past estimation errors by department, by personnel, or by type of
expenditure. The accumulated information can be extremely valuable on revising current forecasting and evaluation methods.

As pointed out by Emery (1998) the two main objectives of post auditing are to improve the company's planning procedures and to update the estimate of the project's market value. Process improvements come from normal feedback and from identifying and removing sources of bias in cash flow forecasts. A revised estimate of a project's market value may cause the company to expand, contract, accelerate, delay, or abandon the project.

**Corporate Strategy and Capital Budgeting**

Bertoneche (1975) argues that in as much as traditional capital budgeting has been refined, particularly with the use of probabilistic risk analysis, and then by linking capital - investment decisions to the market performance of the company's shares through the capital asset pricing model and related theoretical concepts, the common underlying assumption of all financially based approaches to the resources allocation process is that of the fundamental strategic decisions, that is, those "strategic moves which direct an organisation's". The business environment has changed and is likely to be unstable for the unforeseen future.

He therefore suggests the following:

1. That the general strategy of the firm must be made clear at the various levels of management so that projects may receive a more complete and precise review of their strategic ramifications. The capital expenditure analysis should not only be pages of figures and computations, but they
should also clearly state the basic assumptions and raise the right strategic questions.

2. Research should be directed toward the integration of the traditional capital-budgeting framework into the overall resource allocation process of the company by stressing the strategic aspects and adapting the current techniques to the increasing environmental complexity.

The issue of strategic capital budgeting is beginning to receive more attention in the finance literature. Shapiro, (1985), stresses that generating projects likely to yield positive excess returns is at least as important as the conventional quantitative investment analysis. This is the essence of corporate strategy: creating and then taking advantage of imperfections in product and factor markets. Thus, an understanding of the strategies followed by successful firms in exploiting and defending those barriers to entry created by product and factor market imperfections is crucial to any systematic evaluation of investment opportunities. More important, a good understanding of corporate strategy should help uncover new and potential profitable projects.

Empirical evidence shows an increased use of Net Present Value and Internal Rate of Return in evaluating projects; companies are beginning to adopt the use of Capital Assets Pricing Model; and most companies use the company wide Weighted Average Cost of Capital as evidenced from the studies done by Petty and Scott (1980), Graham and Harvey (2001) and Ross (1986).

Petty and Scott (1980) present an analysis and review of several studies that dealt with the integration of investment theory into investment practice. They summarise the findings of a total of 17 Capital Budgeting Surveys from 1960 to 1979. They also present their findings from a new study of investment decision-
making practice derived from responses to a two-page questionnaire that was sent to the Chief Financial Officer of each firm listed in the May 1977 directory of Fortune “500” firms.

The objectives of their paper were

- to present a synthesis of several important surveys into Corporate Capital Budgeting practices and
- to present the results of a new study of Capital Budgeting procedures employed by large organizations.

They observed from their study of prior research, that there is a definite trend in Capital Budgeting practices - Corporate managements are gradually coming to use more sophisticated and theoretically sound approaches in their capital-budgeting analysis. Complementing this historical overview, the empirical portion of the current research affords several conclusions. First, the principal financial objective of large companies is the firm’s return on investment. Second, the initiation of new projects continues to be a bottom-up process. Third, the internal rate of return has unequivocably maintained its preferred position vis-à-vis other evaluation techniques. However, the payback period is still viewed as a strong supplementary tool. Fourth, management’s concept of risk aligns reasonably well with theory; however, the practical application of this concept apparently is still proving difficult. Firth, the financial manager’s interest in diversification as a means of reducing risk is slowly increasing, even to the point that a few executives are attempting to use the capital asset pricing model. Finally, investment hurdle rates are used regularly in the accept-reject decision, with the primary types being a management-determined target rate of return and a weighted cost of capital.
Graham and Harvey (2001), surveyed 392 CFOs about the cost of capital, capital budgeting and capital structure. They examine the relation between the executives’ responses and firm size, P/E ratio, leverage, credit rating, dividend policy, industry, management ownership, CEO age, CEO tenure, and the education of the CEO.

What was of interest to this study was their results on cost of capital and capital budgeting. Their results brought in some variation in the results of the studies summarized by Petty and Scott (1984) above. Their results show that most companies frequently used Net Present Value and Internal Rate of Return to evaluate new projects. Other than NPV and IRR, the Payback Period method is the most frequently used capital budgeting technique. They observe that CAPM is the most popular method of estimating the cost of equity capital. The second and the third most popular methods are average stock returns and a multibeta CAPM respectively. Their results further indicate that small and large firms have different priorities when adjusting for risk. For large firms the most important risk factors (in addition to market risks) are foreign exchange risk, business cycle risk, commodity price risk and interest rate risk. Most companies use a single company – wide discount rate to evaluate the projects rather than a project-specific discount rate.

Ross (1986) presents the results from an in-depth study of capital budgeting for discretionary projects at twelve firms in the process industry. The results indicate that, while discounted cash flow techniques are normally used at most firms, it is important to ask whether the calculations are carried out incorporating essential details and whether it is a DFC criterion or simple payback that is actually relied on. For the small projects, most firms in the sample severely simplify their DFC analysis and or rely primarily on simple payback.
One area that has received little attention is strategic capital budgeting as emphasized by Bertoneneche (1975). He conducted a study on the impact of increasing complexity of business conditions on the capital budgeting process.

The objectives of his paper were to raise the question of the nature of capital budgeting, to investigate the impact of increasing complexity of business conditions in the capital investment process, and to report the main conclusions drawn from interviews conducted in six large European firms. The companies interviewed had detailed procedure manuals based on discounted cash flow techniques, but the managers were of the general feeling that these methods and other refined techniques to appraise the desirability of proposed capital expenditures do not help the decision-making process. These methods have instead led to a great deal of disillusionment, confusion, and frustration, which have increased with the new complexity of business conditions. Most of the difficulties associated with the stages of the capital-budgeting process occur in the project definition and cash flow estimation and in the project implementation and review, not in the financial analysis and project selection phase. He concludes that strategic criteria should be the driving mechanism behind the capital investment process.

No study has been done so far on the capital budgeting techniques as practiced by food and beverage industries in Nairobi. A study done by Kadondi 2002 sought to investigate whether a solution has been found for the lack of specific appraisal technique for projects to be partly undertaken and partly owned by the corporation on behalf of the whole society and partly undertaken and partly owned by private investors.
Kadondi argues that the current Capital Investment Appraisal techniques are applied from only two points of view; namely, that of a private entrepreneur and that of the whole society, considering commercial profitability and public profitability respectively. This leaves a Capital Investment appraiser who wants to appraise a project to be jointly undertaken by a private entrepreneur and a public corporation (the latter acting on behalf of the whole society), with a problem. Such an appraiser does not have an appraisal technique specifically developed for such a project to be jointly undertaken by a private entrepreneur and a public corporation.

Kadondi examined how two public corporations in Kenya, the Industrial and Commercial Development Corporation and the Kenya Tourist Development Corporation which undertake and manage projects jointly with private entrepreneurs had solved the problem of how to appraise partly public and partly private projects. He concluded from his research that the two corporations have not tackled the problem of how to appraise partly private and partly public projects.

2.6 Conceptual framework

The investment decision rules are referred to as capital budgeting techniques or investment criteria. Sound appraisal technique should be used to measure the economic worth of an investment project. The essential property of a sound technique is that it should maximize the shareholders’ wealth.

The evaluation techniques are broadly classified into two categories:
Discounted cash flow techniques

These techniques take into consideration the time value of money and account for all the cash flows in evaluating the project. They include; Net Present Value, Internal Rate of Return and Profitability Index.

Non-discounted cash flow techniques

These techniques do not take into consideration the time value of money. They include Payback Period and Accounting Rate of Return.

New investment projects are undertaken by the company for various reasons such as:

- Expansion
- Increase market share
- Survival
- Reduce the gearing or overall risk of the company
- Maximize shareholders' wealth, which is the overall goal of a firm.

The projects to be undertaken by the company will depend on various factors among them.

- Initial outlay.
- Economic life
- Adaptability to technological changes
- Risk of project
- Production capacity
- Efficiency of the project
- Availability of expertise
- Inflation
- Capital rationing
Independent variables

- Payback Period.
- Net Present Value.
- Profitability Index.
- Accounting Rate of Return.
- Internal Rate of Return.

Dependent variable

- Extent of application.

Intervening variables

- Political
- Economic
- Social
- Technological
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the research methodology that was used in the study, the population of interest, the sample size and selection method and description of the data, collection instrument and data analysis.

3.2 RESEARCH DESIGN

The objectives of the study were be achieved by conducting a survey on 30 food and beverage firms situated in Nairobi. A survey research aims at collecting data from numbers of a population with respect to one or more variables. The study is descriptive in nature. Descriptive research is a process of collecting data in order to answer questions concerning the status of the study (Gay 1983).

3.3 THE TARGET POPULATION

The target population comprised of forty five Food and Beverage industries registered with KAM and located in Nairobi. (Appendix III).

The choice of Nairobi as the area to be covered by the study was mainly due to convenience in terms of accessibility, time schedule and financial resources available to the researcher.
3.4 SAMPLING STRATEGY

After considering the diverse distribution of Food and Beverage companies within Nairobi, a sample of 30 firms was selected. The population was stratified into five strata based on the type of product produced as shown below.

Table 1: Sampling Plan

<table>
<thead>
<tr>
<th>Type (strata)</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic drinks and Spirits, Juices, Water and soft drinks.</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Dairy products</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Bakers and Millers</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Cocoa, chocolate and sugar confectionery.</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Edible oils, cooking fats and soaps</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>30</td>
</tr>
</tbody>
</table>

Simple random sampling was used using a sample without replacement method.

3.5 DATA TYPES AND DATA COLLECTION TOOLS

To achieve the objectives of the study, primary data was utilized. Primary data was collected using self administered questionnaires containing open and closed ended questions, interviews were also conducted. The questionnaire were administered on the basis of ‘drop and pick later’ or picked immediately depending on the availability of respondents.
The target respondents were finance managers since they are in charge of approving investment decisions. In firms where there are no finance managers, chief accountants were targeted.

3.6 DATA ANALYSIS

Data collected was analyzed by use of descriptive statistics. The statistical package for social sciences (SPSS) was used to generate frequency tables and percentages.
CHAPTER FOUR

4.0 DATA ANALYSIS AND STUDY FINDINGS

4.1 INTRODUCTION

This chapter presents the analysis of the data collected and also discusses the findings of the study. The data collected was analyzed by use of descriptive statistics. The Statistical Packages for Social Sciences (SPSS) was used to generate frequency tables and percentages. The analysis and responses were analyzed and summarized into eleven sub-topics namely:- Overview of data collected and analyzed, Awareness with various Capital Budgeting Techniques, Utilization status of Capital Budgeting Techniques, Design of the Capital Budgeting Techniques, Reasons for using various Capital Budgeting Techniques, Basis of Investment proposals origination of Investment Proposals, factors significant in Capital Budgeting, Long-term investments undertaken recently, Review of implemented Projects and factors that inhibit effective application of capital budgeting Techniques.

4.2 OVERVIEW OF DATA COLLECTED AND ANALYZED

Out of 40 questionnaires that were distributed, 30 were returned. This represents a response rate of 75%, which was considered significant enough, to provide a basis for valid and reliable conclusions with regard to the extent of application of Capital Budgeting Techniques in the Food and Beverage firms in Kenya.

Figure 1 and Table 2 below show a summary of the questionnaires returned as per company ownership, category of firm and years of operation. From figure 1, majority of the firms surveyed were locally owned representing 50%, Foreign owned and Joint ventures represented 16.7% and 33.3% respectively.
Figure 1: Type of Ownership

![Type of Ownership Pie Chart]

Table 2 below, shows that of all the respondents, 16.7% were Alcoholic firms, 6.7% Dairy firms, 60.0% Cocoa/Chocolate firms, 10% Bakers and Millers and 6.7% Edible oils.

<table>
<thead>
<tr>
<th></th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa/Chocolate</th>
<th>Bakers &amp; Millers</th>
<th>Edible oils</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>3(10)</td>
<td>2(6.7)</td>
<td>5(16.7)</td>
<td>3(10)</td>
<td>2(6.7)</td>
<td>15(65.9)</td>
</tr>
<tr>
<td>Foreign</td>
<td>1(3.3)</td>
<td>0(0)</td>
<td>4(13.4)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>5(16.7)</td>
</tr>
<tr>
<td>Joint</td>
<td>1(3.3)</td>
<td>0(0)</td>
<td>9(30)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>10(33.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5(16.7)</td>
<td>2(6.7)</td>
<td>18(60.0)</td>
<td>3(10)</td>
<td>2(6.7)</td>
<td>30(100)</td>
</tr>
</tbody>
</table>

Further, the 16.7% Alcoholic firms comprised of 10% locally owned firms. 3.3% foreign owned and 3.3% joint venture. For the Dairy firms (6.7%), 6.7% were locally owned. This indicates that all Dairy firms were locally owned. The
cocoa/chocolate firms (60.0%) comprised of 2(16.7%). Locally owned, 13.4% foreign owned and 30% joint venture. From the table above, it can be seen that there were no Dairy or edible oil firms which were foreign or joint ventures.

Table 3: Years Of Operation For The Various Categories

<table>
<thead>
<tr>
<th></th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa/Chocolate</th>
<th>Bakers &amp; Millers</th>
<th>Edible oils</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
</tr>
<tr>
<td>Less than 10 years</td>
<td>1(3.3)</td>
<td>2(6.7)</td>
<td>5(16.7)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>8(26.7)</td>
</tr>
<tr>
<td>Between 10 and 20 years</td>
<td>1(3.3)</td>
<td>0(0)</td>
<td>8(26.6)</td>
<td>2(6.7)</td>
<td>2(6.7)</td>
<td>13(43.3)</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>3(10)</td>
<td>0(0)</td>
<td>5(16.7)</td>
<td>1(3.3)</td>
<td>0(0)</td>
<td>9(30)</td>
</tr>
<tr>
<td>Total</td>
<td>5(16.7)</td>
<td>2(6.7)</td>
<td>18(60)</td>
<td>3(10)</td>
<td>2(6.7)</td>
<td>30(100)</td>
</tr>
</tbody>
</table>

From table 3, most of the firms (43.3%) have been in existence between 10 and 20 years while 26.7% and 30% have been in existence less than 10 years and more than 20 years respectively. Among the 16.7% Alcoholic firms, 3.3% have been in existence for less than 10 years, 3.3% between 5 and 10 years and 10% for more than 20 years. It can be concluded that the Dairy firms have been in existence for less than 10 years. Most cocoa and chocolate and edible oil firms have been in existence for between 10 and 20 years.

4.3 AWARENESS WITH VARIOUS CAPITAL BUDGETING TECHNIQUES

The study targeted finance managers of the selected firms. It was therefore necessary to test their level of awareness of the various Capital Budgeting techniques to determine whether they possessed any formal knowledge. The
results revealed that 88.6% of the respondents were very aware of Payback Period and 88.4% with Net Present Value. 45.5% were vaguely aware with Internal Rate of Return and 40.9% with Profitability index. The results also revealed that most of the respondents were not aware of Accounting Rate of Return (59.1%).

From figure 2, it can be concluded that, there was no firm which was completely unaware of Internal Rate of Return, Net Present Value and Payback Period techniques.

From table 4 below, those who were very aware with Payback Period (88.6%) comprised 25% Alcoholic, 18.2% Dairy, 9.1% cocoa and chocolate firms, 20.5% Bakers and Millers and 15.9% Edible oils. Those who were not aware of Accounting Rate of Return (59.1%) included 15.9% Alcoholic firms, 4.5% Dairy,
4.5% Bakers and Millers, 22.7% Cocoa and Chocolate products and 11.4% Edible oils. Bakers and Millers and Chocolate firms were only vaguely aware of completely unaware of Accounting Rate of Return.

From the table it can be concluded that all the Dairy and Alcoholic firms were very aware of Net Present Value and Payback period.

Table 4: Level of awareness of various techniques in the various categories of firms

<table>
<thead>
<tr>
<th>Technique</th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa/Chocolate</th>
<th>Bakers &amp; Millers</th>
<th>Edible oils</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11.4</td>
<td>18.2</td>
<td>0</td>
<td>13.6</td>
<td>6.8</td>
</tr>
<tr>
<td>V</td>
<td>25</td>
<td>4.5</td>
<td>0</td>
<td>18.2</td>
<td>6.8</td>
</tr>
<tr>
<td>C</td>
<td>25</td>
<td>4.5</td>
<td>0</td>
<td>20.5</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>13.6</td>
<td>13.6</td>
<td>2.3</td>
<td>11.4</td>
<td>9.1</td>
</tr>
<tr>
<td>R</td>
<td>2.3</td>
<td>11.4</td>
<td>15.9</td>
<td>4.5</td>
<td>22.7</td>
</tr>
</tbody>
</table>

Key: A - Very Aware    V - Vaguely Aware    C - Completely Unaware

4.4 UTILIZATION STATUS OF CAPITAL BUDGETING TECHNIQUES

After determining the extent of awareness, it was necessary to determine the extent of use of these techniques. From figure 3, it can be observed that Net Present Value (72.7%) and Payback Period (65.9%) were widely used, while Internal Rate of Return and Profitability Index (38.6%) were moderately used. Accounting Rate of Return (70.5) was never used. It can also be observed that there was no firm that never used Payback Period. From figure 2 and figure 3, it can be concluded that the level of awareness with the various Capital Budgeting techniques, determines the extent of their use that is there is a positive relationship between the two.
From table 5 below, the most commonly used techniques in Alcoholic firms are Net Present Value (22.7%) and Payback Period (20.5%). Internal Rate of Return is moderately used (22.7%) while Accounting Rate of Return (20.5%) is least used. For the Dairy firms, Payback Period (15.9%) and Net Present Value (13.6%) are frequently used; Internal Rate of Return (11.4%) and Profitability Index (11.4%) are moderately used while Accounting Rate of Return is least used in the Bakers and Millers. Net Present Value (15.9%) is frequently used, Payback Period (13.6%) and Internal Rate of Return are moderately used while Accounting Rate of Return (22.7%) is least used.
Table 5: Extent of use of the various capital budgeting techniques

<table>
<thead>
<tr>
<th>Technique</th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa/Chocolate</th>
<th>Bakers &amp; Millers</th>
<th>Edible oils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
<td>N</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>4.5</td>
<td>22.7</td>
<td>2.3</td>
<td>9.1</td>
<td>11.4</td>
<td>0</td>
</tr>
<tr>
<td>20.5</td>
<td>9.1</td>
<td>0</td>
<td>15.9</td>
<td>4.5</td>
<td>0</td>
</tr>
<tr>
<td>22.7</td>
<td>6.8</td>
<td>0</td>
<td>13.6</td>
<td>6.8</td>
<td>0</td>
</tr>
<tr>
<td>13.6</td>
<td>11.4</td>
<td>4.5</td>
<td>9.1</td>
<td>9.1</td>
<td>2.3</td>
</tr>
<tr>
<td>0</td>
<td>9.1</td>
<td>20.5</td>
<td>2.3</td>
<td>6.8</td>
<td>11.4</td>
</tr>
</tbody>
</table>

**KEY:** F - Frequently used  M - Moderately used  N - Never used

From table 5, it can be observed that Accounting Rate of Return is only frequently used (2.3%) in Dairy firms while for the rest of the firms it is either moderately used or least used. It can also be concluded that most of the firms frequently use Payback Period and Net Present Value.

### 4.5 Design of the Capital Budgeting Techniques

The results revealed that for most companies (83.3%), the finance managers design the capital budgeting techniques used by the firm, while for the other companies outside consultants' design 16.7%.

Table 6: Design of the Capital Budgeting Techniques

<table>
<thead>
<tr>
<th>Technique</th>
<th>Finance manager</th>
<th>Company staff</th>
<th>Outside Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td>4(3.3)</td>
<td>0(0)</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Dairy</td>
<td>2(6.7)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>Cocoa and Chocolate</td>
<td>15(50)</td>
<td>0(0)</td>
<td>3(10)</td>
</tr>
<tr>
<td>Bakers &amp; Millers</td>
<td>2(6.7)</td>
<td>0(0)</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Edible oils</td>
<td>2(6.7)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>Total</td>
<td>25(83.3)</td>
<td>0(0)</td>
<td>5(16.7)</td>
</tr>
</tbody>
</table>
From the table 6 above, it can be noted that finance managers (83.3%) design most of the Capital Budgeting Techniques in Alcoholic (13.3%), Dairy (6.7%), Cocoa and Chocolate (50%), Bakers and Millers (6.7%) and Edible oils (6.7%) outside consultants play the least role in the alcoholic (3.3%) and Bakers and Millers (3.3%). In Dairy and Edible oil firms outside consultants play no role while in Cocoa and Chocolate firms they partly play the role. It can be concluded from the table below that finance managers play a vital role in the design of capital budgeting techniques.

**Table 7: Year of Design of the Capital Budgeting Technique currently used**

<table>
<thead>
<tr>
<th></th>
<th>More than 10 years</th>
<th>Between 5 and 10 years</th>
<th>Less than 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.(%)</td>
<td>No.(%)</td>
<td>No.(%)</td>
</tr>
<tr>
<td>Alcoholic</td>
<td>1(3.3)</td>
<td>1(3.3)</td>
<td>3(10)</td>
</tr>
<tr>
<td>Dairy</td>
<td>0(0)</td>
<td>0(0)</td>
<td>2(6.7)</td>
</tr>
<tr>
<td>Cocoa &amp; Chocolate</td>
<td>0(0)</td>
<td>5(16.7)</td>
<td>13(43.4)</td>
</tr>
<tr>
<td>Bakers &amp; Millers</td>
<td>0(0)</td>
<td>1(3.3)</td>
<td>2(6.7)</td>
</tr>
<tr>
<td>Edible oils</td>
<td>0(0)</td>
<td>2(6.7)</td>
<td>0(0)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1(3.3)</strong></td>
<td><strong>9(30)</strong></td>
<td><strong>20(66.7)</strong></td>
</tr>
</tbody>
</table>

From table 7, most of the Capital Budgeting Techniques (66.7%) were designed less than five years ago while 30% were designed between 5 and 10 years ago and 3.3% designed more than 10 years ago. This is in line with the literature reviewed because for any organization to maintain the competitive edge it should practice continuous improvement. Stiff competition has created an environment in which only the most effective and productive firms will survive. Among the 66.7% companies that designed their capital budgeting techniques
less than 5 years ago, Alcoholic firms represented 10%, Dairy 6.7%, Cocoa and Chocolate 43.3% and Bakers and Millers 6.7%.

Those firms that design their capital budgeting techniques between 5 and 10 years include 3.3% alcoholic, 16.7% Cocoa and Chocolate, 3.3% Bakers and Millers and 6.7% Edible oils.

It can be concluded from the above table that majority of the firms keep on updating their capital budgeting techniques. All the techniques used by edible oil firms were designed between 5 and 10 years ago.

4.6 REASONS FOR USING VARIOUS CAPITAL BUDGETING TECHNIQUES

The selection of a capital budgeting technique used by a firm depends on many factors. From table 9 below, most of the firms cited accuracy and reliability (86.7%) to be the major factor influencing selection. The other factors were rated as ease of interpretation of results (86.7%), ease in understanding and applying (56.7%), less cost in developing (33.3%) and detailed in analysis (33.3%). From the findings, most firms do not use techniques that are involving or detailed in analysis (33.3%) and are less costly to develop (33.3%). This is consistent with the results of extent of use, since Profitability Index and Accounting Rate of Return, which were deemed to be less costly to develop and detailed in analysis, were found to be rarely used. Therefore, it can be concluded that firms do not use Profitability Index and Accounting Rate of Return because they are detailed in analysis.
<table>
<thead>
<tr>
<th></th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa &amp; Chocolate</th>
<th>Bakers &amp; Millers</th>
<th>Edible Oils</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurate/ Reliable</td>
<td>5(16.7)</td>
<td>2(6.7)</td>
<td>15(50)</td>
<td>2(6.7)</td>
<td>2(6.7)</td>
<td>26(86.7)</td>
</tr>
<tr>
<td>Easy to understand and apply</td>
<td>3(10)</td>
<td>2(6.7)</td>
<td>10(33.3)</td>
<td>1(3.3)</td>
<td>1(3.3)</td>
<td>17(56.7)</td>
</tr>
<tr>
<td>Less costly to develop</td>
<td>2(6.7)</td>
<td>1(3.3)</td>
<td>6(20)</td>
<td>1(3.3)</td>
<td>0(0)</td>
<td>10(33.3)</td>
</tr>
<tr>
<td>Easy interpretation of results</td>
<td>5(16.7)</td>
<td>2(6.7)</td>
<td>15(50)</td>
<td>2(6.7)</td>
<td>2(6.7)</td>
<td>26(86.7)</td>
</tr>
<tr>
<td>Detailed in analysis</td>
<td>3(10)</td>
<td>1(3.3)</td>
<td>5(16.7)</td>
<td>0(0)</td>
<td>1(3.3)</td>
<td>10(33.3)</td>
</tr>
</tbody>
</table>

From table 8, Alcoholic firms, Dairy, Cocoa and Chocolate, Bakers and Millers and Edible oil firms mainly select the techniques they use because of accuracy and reliability and ease in interpretation of the results. Detailed in analysis was less cited by most firms.

### 4.7 BASIS OF INVESTMENT PROPOSALS

With regard to basis of investment proposals most firms cited market research (63.6%) while for competitors' action (60%), market demand (43.3%) and technical and engineering methods (40%).

None of the firms cited Business Partner requirements or significant changes in environment as a base for investment proposal.
Table 9: Basis of investment proposals

<table>
<thead>
<tr>
<th></th>
<th>Alcoholic</th>
<th>Dairy</th>
<th>Cocoa and chocolate</th>
<th>Bakers and millers</th>
<th>Edible oils</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market research</td>
<td>3(10%)</td>
<td>2(6.7%)</td>
<td>10(33.3%)</td>
<td>2(3.5%)</td>
<td>2(6.7%)</td>
<td>19(63.3%)</td>
</tr>
<tr>
<td>Technical and Engineering methods</td>
<td>2(6.7%)</td>
<td>2(6.7%)</td>
<td>5(16.7%)</td>
<td>1(3.3%)</td>
<td>2(6.7%)</td>
<td>12(40%)</td>
</tr>
<tr>
<td>Computerization</td>
<td>1(3.3%)</td>
<td>2(6.7%)</td>
<td>12(40%)</td>
<td>1(3.3%)</td>
<td>2(6.7%)</td>
<td>18(60%)</td>
</tr>
<tr>
<td>Business Partner</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>Requirements</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>Market demand</td>
<td>3(10%)</td>
<td>2(6.7%)</td>
<td>5(16.7%)</td>
<td>2(6.7%)</td>
<td>1(3.3%)</td>
<td>13(43.3%)</td>
</tr>
<tr>
<td>Significant changes in environment</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
</tbody>
</table>

4.8 ORIGINATION OF INVESTMENT PROPOSALS

Most firms indicated that most investment proposals originated from executive management especially projects dealing with expansion and diversification. Proposals for adding a new product emanated from marketing manager while proposals in the nature of cost reduction or replacement or product improvement takes place at plant level.

It can be concluded from the above that origination of investment proposals depends with the nature of the project.
4.9 FACTORS SIGNIFICANT IN CAPITAL BUDGETING

All the firms cited the following factors to be important in capital budgeting: cost, economic life, adaptability to technological changes, risk of the project, production capacity and efficiency in production.

Most firms indicated that all the above factors were important before undertaking an investment proposal. It can be concluded that each firm should critically analyse the above factors for there to be success with any project undertaken.

4.10 LONG-TERM INVESTMENTS UNDERTAKEN RECENTLY

Most firms indicated that Capital Budgeting is of due importance to them. A company's survival and profitability hinges on capital expeditions especially the major ones. Projects undertaken by majority of the firms included innovation of new products, expanding warehouse, computerizing operations and acquiring new manufacturing machinery. Instituting a staff training scheme was least cited. It can be concluded that most firms undertake projects that will be beneficial to the firm directly.

4.11 REVIEW OF IMPLEMENTED PROJECTS

Most companies review their projects at regular intervals (56.7%) while for some at once (43.3%). Implemented projects are mostly reviewed by executive management while for some by marketing managers and plant and divisional managers.
For all projects that originated at various levels different managers have the responsibility of reviewing.

Table 10: Review of Capital Budgeting Techniques

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Continuous basis</th>
<th>Regular intervals</th>
<th>Once</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td>0(0)</td>
<td>0(0)</td>
<td>4(13.4%)</td>
<td>1(3.3%)</td>
<td>5(16.7%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>0(0)</td>
<td>0(0)</td>
<td>2(6.7%)</td>
<td>0(0)</td>
<td>2(6.7%)</td>
</tr>
<tr>
<td>Cocoa and Chocolate</td>
<td>0(0)</td>
<td>0(0)</td>
<td>10(33.3%)</td>
<td>8(26.7%)</td>
<td>18(60%)</td>
</tr>
<tr>
<td>Bakers and Millers</td>
<td>0(0)</td>
<td>0(0)</td>
<td>1(3.3%)</td>
<td>2(6.7%)</td>
<td>3(10%)</td>
</tr>
<tr>
<td>Edible oils</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>2(6.7%)</td>
<td>2(6.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>0(0)</td>
<td>0(0)</td>
<td>17(56.7%)</td>
<td>13(43.3%)</td>
<td>30(100%)</td>
</tr>
</tbody>
</table>

It can be concluded that, different managers who come up with investment proposals should be given sole responsibility for their review.
CHAPTER FIVE

5.0 SUMMARY AND RECOMMENDATION

5.1 INTRODUCTION

This chapter mainly gives a summary of the findings of the study in the light of the objectives set forth in chapter one. In addition, the chapter discusses the Recommendations, Limitations of the study and suggested areas for further study.

5.2 SUMMARY AND CONCLUSIONS

The study sought to achieve four objectives namely: To investigate the extent of application of Capital Budgeting Techniques in the Food and Beverage firms in Kenya, to document the Capital Budgeting Techniques in use, to find out factors that inhibit effective application of Capital Budgeting Techniques and to find out investment projects undertaken recently.

The results of the study showed that most Food and Beverage firms located in Nairobi are locally owned and have been in existence for more than 20 years. The findings also showed that most finance managers were aware of Net Present Value, Payback Period and Internal Rate of Return. Profitability Index and Accounting Rate of Return were the least familiar methods.

Regarding the extent of usage, the most commonly used techniques included Payback Period and Net Present Value. Profitability Index, Accounting Rate of Return and Internal Rate of Return were least used. The capital budgeting techniques used by most of the Food and Beverage firms were designed by
finance managers and outside consultants. Most of the techniques were designed less than 5 years ago while others between 5 and 10 years. Very few were designed more than 10 years ago.

Accuracy and reliability was the best reason cited by most firms for the use of the techniques they currently utilize. Ease in understanding and applying was another major reason given. Less costly to develop and detailed in analysis were least cited. Basis of investment proposals were cited to be from market research, technical and engineering methods, competitors' action and changes in market demand. Changes in business partners requirements and in the environment were least cited.

Investment proposals of various types were cited to originate at different levels within a firm. Most proposals in the nature of cost reduction or replacement or product improvement were cited to take place at plant level. The executive management was cited to concentrate with expansion or diversification projects. But in all firms' executive management play a key role in origination of investment proposals. Cash inflows, determining the discount rate and risk of the projects were cited to be the most significant factors in capital budgeting. Most firms agreed that they keep on undertaking new investment projects since they have a great influence on their profitability and survival. Majority of the firms cited launching new products and acquiring manufacturing machinery to be the long-term investments carried out recently. Computerizing their operations and expanding warehouse were also highlighted by some firms. Instituting staff training scheme was least cited.

As regards factors that inhibit capital investment projects, availability of capital market forces and inflation were most cited. Availability of expertise and management policy was quoted by few firms. Most firms indicated that
implemented projects were reviewed by executive management at regular intervals from the findings of the study, some conclusions can be made. First, it was found out that Net Present Value was widely used. This is in line with literature reviewed. Net Present Value is consistent with the overall objective of a firm that is maximizing the shareholders wealth. Also payback period was widely used since it indicates the number of years a company will take before it recoups the original investment. This can be attributed to the fact that most firms are interested with getting back what they had invested.

Secondly, for most projects undertaken most firms had used Capital Budgeting Techniques for investment appraisal especially alcoholic and dairy firms. In the Bakers and Millers, confectionary and edible oil firms these techniques were moderately used. This can explain the fact that dairy firms and alcoholic firms are doing well in the market. They are becoming more profitable and are expanding operations.

Thirdly, instituting a staff training scheme was least cited by most firms. Most firms need to be educated on the importance of training their staff because it has a positive correlation to their productivity. Hence firms should be willing to spend on their employees for the reason that they constitute a valuable resource to the company.

5.3 RECOMMENDATIONS

Some pertinent recommendations aimed at improving the application of capital budgeting techniques in food and beverage firms can be made from the findings of the study. Training for all staff especially the ones involved in investment proposals should be encouraged. Although regarded as a central role in achieving organizational objectives, employee involvement is frequently not
utilized to its fullest potential simply because the role of training and education is underestimated. Effective training and educating programs can assist an organization in achieving maximum potential from the work force.

Firms should not proceed to undertake a project before they analyze it properly; they should not ignore the importance of capital budgeting techniques. This is because investment decisions influence the growth of the firm in the long-run, affect the risk of the firm, involve commitment of large amount of funds, investments projects are irreversible or reversible at substantial loss and are among the most difficult decisions to make. Hence a firm should not take risk of undertaking projects without use of capital budgeting techniques.

5.4 LIMITATIONS OF THE STUDY

The major limitation of the study was the non-response from some of the respondents. Some argued out that it was against the company's policy to respond to questionnaires while others felt that information needed was too confidential to give despite the assurance given by the researcher. This affected the response rate.

Financial resources were also another limiting factor. Due to limited resources available to the researcher it was not possible to sample firms outside Nairobi. This might have affected the generalizations made. The time available for analysis was short and could not allow the researcher to use other statistical tools to analyze the data.
5.5 SUGGESTED AREAS FOR FURTHER STUDY

The study focused on investigating the extent of application of capital budgeting techniques in the food and beverage firms. A similar study could be carried out in the oil industry to determine whether capital budgeting techniques are in use. A similar study could also be carried out in the service industry e.g insurance firms, hospitals, hotels and learning institutions. This could allow a comparison to be made between the product and service industry.
BIBLIOGRAPHY


APPENDIX I

QUESTIONNAIRE

The purpose of this questionnaire is to investigate the extent of application of Capital Budgeting Techniques in the Food and Beverage industries in Nairobi.

Your assistance in providing this information which will be kept confidential is appreciated. It is part of Kenyatta University post graduate management research project.

1. How would you classify your firm with regard to ownership?
   Locally owned [ ]
   Foreign owned [ ]
   Joint venture (Foreign & Local) [ ]

2. In which of the following categories does your firm fall under?
   [ ] Alcoholic drinks and Spirits/Juices/Water/Soft drinks
   [ ] Dairy products
   [ ] Bakers and Millers
   [ ] Cocoa, Chocolate and Sugar Confectionery
   [ ] Edible oils, cooking fats and soaps

3. For how long has your company been in existence?
   Less than 10 years [ ]
   Between 10 years and 20 years [ ]
   More than 20 years [ ]
4. To what extent is Capital Budgeting Techniques used in your firm?
   Widely used [ ]
   Moderately used [ ]
   Least used [ ]

5. Among the following Capital Budgeting Techniques, which ones are you aware of or familiar with?

<table>
<thead>
<tr>
<th>Technique</th>
<th>Very Aware</th>
<th>Vaguely Aware</th>
<th>Completely unaware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payback period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Rate of Return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Rate of Return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Present Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profitability Index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
<pre><code>                                  |            |               |                   |
</code></pre>

6. To what extent does your company use the following Capital Budgeting Techniques in your investment proposal?

<table>
<thead>
<tr>
<th>Technique</th>
<th>Frequently used</th>
<th>Moderately used</th>
<th>Never used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payback period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Rate of Return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Rate of Return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Present Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profitability Index</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

65
7. Who developed or designed the capital budgeting technique that your firm is currently using?
   [ ] Finance Manager
   [ ] Company Staff
   [ ] Outside Consultant
   Others (please specify)
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

8. When did your company design the Capital Budgeting Techniques that you are currently using?
   More than 10 years ago [ ]
   Between 5 and 10 years ago [ ]
   No idea [ ]

9. What reason(s) would you give for the Capital Budgeting Technique(s) currently utilized by your firm?
   Accurate/Reliable [ ]
   Easy to understand and apply [ ]
   Easy and less costly to develop [ ]
   Easy interpretation of results [ ]
   Detailed in analysis [ ]
   Others (please specify)
   .................................................................................................................
   .................................................................................................................
10. Rank the following factors in the order of importance on how you base your investment proposals.

**External sources**
- [ ] Market Research
- [ ] Technical and engineering methods
- [ ] Competitors action
- [ ] Changes in business partners requirements
- [ ] Changes in market demand
- [ ] Significant changes in the environment

11. Rank in terms of frequency on who originates your investment proposals.

<table>
<thead>
<tr>
<th>Most Frequent</th>
<th>Frequent</th>
<th>Rare</th>
</tr>
</thead>
</table>
- [ ] Executive management
- [ ] Budget committee
- [ ] Plant/Divisional managers
- [ ] Marketing Manager

12. Which of the following factors are most significant in Capital Budgeting? Rank in order of importance.

- [ ] Cost
- [ ] Economic life
- [ ] Adaptability to technological changes
- [ ] Risk of project
- [ ] Production capacity
- [ ] Efficiency in production
13. Which of the following long term investments have your company carried out recently?

- Launching a new product [ ]
- Acquiring new manufacturing machinery [ ]
- Instituting a staff training scheme [ ]
- Expanding warehouse [ ]
- Introducing a new computerized system [ ]

Others (please specify)
...........................................................................................................................
...........................................................................................................................
...........................................................................................................................
...........................................................................................................................

14. Which of the following factors can limit your Capital Investment decisions? Rank in order of importance.

- Availability of capital (Capital rationing) [ ]
- Availability of expertise [ ]
- Management policy on the type of project [ ]
- Market forces [ ]
- Inflation [ ]

Others (please specify)
...........................................................................................................................
...........................................................................................................................
...........................................................................................................................
...........................................................................................................................
15. Indicate how often you review/Monitor implemented projects.

[ ] Not at all
[ ] On a continuous basis
[ ] At Regular intervals
[ ] Once

16. Who reviews implemented projects?

[ ] Executive management
[ ] Budget committee
[ ] Plant/Divisional managers
[ ] Operating personnel

THANK YOU VERY MUCH FOR YOUR COOPERATION
## APPENDIX II

### LIST OF AGRO-BASED MANUFACTURING FIRMS REGISTERED WITH KENYA ASSOCIATION OF MANUFACTURERS

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine Coolers Ltd</td>
<td>Kevian Kenya Ltd</td>
</tr>
<tr>
<td>Aquamist Ltd</td>
<td>Kwality Candies &amp; Sweets Ltd</td>
</tr>
<tr>
<td>Bidco Oil Refineries Ltd</td>
<td>London Distillers (K) Ltd</td>
</tr>
<tr>
<td>Bio Foods Products Ltd</td>
<td>Maizena Millers Ltd</td>
</tr>
<tr>
<td>Brookside Dairy Ltd</td>
<td>Mini Bakeries (Nbi) Ltd</td>
</tr>
<tr>
<td>Cadbury Kenya Ltd</td>
<td>Nairobi Bottlers Ltd</td>
</tr>
<tr>
<td>Candy Kenya Ltd</td>
<td>Nairobi Flour Mills Ltd</td>
</tr>
<tr>
<td>Com Products Kenya Ltd</td>
<td>Nestle Foods Kenya Ltd</td>
</tr>
<tr>
<td>Con-Fec Industries Ltd</td>
<td>Patco Industries Ltd</td>
</tr>
<tr>
<td>Erdemann Co. (K) Ltd</td>
<td>Pembe Flour Mills Ltd</td>
</tr>
<tr>
<td>Excel Chemical Ltd</td>
<td>Premier Flour Mills Ltd</td>
</tr>
<tr>
<td>Excel Industries Ltd</td>
<td>Premier Food Industries Ltd</td>
</tr>
<tr>
<td>Giloil Company Ltd</td>
<td>Proctor &amp; Allan (E.A) Ltd</td>
</tr>
<tr>
<td>Global Allied Industries Ltd</td>
<td>Rafiki Millers Ltd</td>
</tr>
<tr>
<td>Global Beverages Ltd</td>
<td>Softa Bottling Co. Ltd</td>
</tr>
<tr>
<td>Hail &amp; Cotton Distiller Ltd</td>
<td>Spin Knit Dairy Ltd</td>
</tr>
<tr>
<td>Kapa Oil Refineries Ltd</td>
<td>Super Bakery Ltd</td>
</tr>
<tr>
<td>Kenafic Industries Ltd</td>
<td>UDV Kenya Ltd</td>
</tr>
<tr>
<td>Company Name</td>
<td>Company Name</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>Kenya Breweries Ltd</td>
<td>Unga Group Ltd</td>
</tr>
<tr>
<td>Kenya Millers Ltd</td>
<td>United Millers Ltd</td>
</tr>
<tr>
<td>Kenya Nut Company Ltd</td>
<td>Uzuri Foods Ltd</td>
</tr>
<tr>
<td>Kenya Sweets Ltd</td>
<td>Virani Curry Powder &amp; Flour</td>
</tr>
<tr>
<td>Kenya Wine Agencies Ltd</td>
<td>Wrigley Company (E.A) Ltd</td>
</tr>
</tbody>
</table>

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# APPENDIX III

## TIMETABLE OF EVENTS

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>TIME (WEEKS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>The Pilot Study</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Data Collection</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Data Coding</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Data analysis</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Report writing</td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Report compilation</td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>Presentation</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX IV

BUDGET

<table>
<thead>
<tr>
<th>ITEM</th>
<th>COST (KSHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Cost of proposal development</td>
<td></td>
</tr>
<tr>
<td>i) Printing 62 pages @ Kshs 20</td>
<td>1240.00</td>
</tr>
<tr>
<td>ii) Binding 6 copies @ Kshs 150</td>
<td>900.00</td>
</tr>
<tr>
<td>iii) Production of 5 copies @ kshs 200</td>
<td>1000.00</td>
</tr>
<tr>
<td>iv) Diskettes 3 @ kshs 50</td>
<td>150.00</td>
</tr>
<tr>
<td>b) Cost of data collection and analysis</td>
<td></td>
</tr>
<tr>
<td>i) Traveling expenses</td>
<td>5000.00</td>
</tr>
<tr>
<td>ii) Lunch (in the field work)</td>
<td>3000.00</td>
</tr>
<tr>
<td>iii) Research assistants</td>
<td>1800.00</td>
</tr>
<tr>
<td>iv) Data processing</td>
<td>1800.00</td>
</tr>
<tr>
<td>Subtotal</td>
<td>12800.00</td>
</tr>
<tr>
<td>c) Production of the final document</td>
<td></td>
</tr>
<tr>
<td>i) Printing 100 pages @ Kshs 20</td>
<td>2000.00</td>
</tr>
<tr>
<td>ii) Reproduction of 4 copies @ 500</td>
<td>3000.00</td>
</tr>
<tr>
<td>iii) Binding 5 copies (project &amp; copies) @ 60</td>
<td>3000.00</td>
</tr>
<tr>
<td>d) Contingencies</td>
<td>3000.00</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td><strong>26,090.00</strong></td>
</tr>
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