INFLUENCE OF STRATEGIC COST ACCOUNTING PRACTICES ON PRODUCTION EFFICIENCY OF MANUFACTURING FIRMS IN NAIROBI CITY, KENYA

BY

NJOROGE SARAH WANJIKU

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND FINANCE

MASENO UNIVERSITY

ABSTRACT

Strategic cost and management accounting literature show that strategic cost accounting practices are important in driving firm production efficiency. Previous studies do not investigate the link between these practices and performance. Therefore, the extent of adoption of the strategic cost accounting practices has not been studied. Given that the manufacturing sector has a great potential on promoting economic growth, the effect of strategic budgeting, strategic analysis and strategic information for decision making on production efficiency has not been assessed. Therefore, the purpose of this study was to analyze the influence of strategic cost accounting practices on production efficiency of manufacturing firms in Nairobi, Kenya. Specific objectives of the study were to: establish extent of adoption of strategic cost accounting by the manufacturing firms; evaluate the effect of strategic budgeting on production efficiency; establish the relationship between strategic analysis and production efficiency; establish the effect of strategic information for decision making on production efficiency of manufacturing firms in Nairobi City, Kenya. The study was anchored on Universalistic theory. The study adopted a correlational research design. The target population was all the 455 companies in Nairobi. Proportionate sampling method was applied to yield the sample size of 46 manufacturing firms. Primary and secondary data was obtained using semi-structured questionnaire and desk review respectively. Reliability and validity tests were done using test-retest method and expert reviewers respectively. Data analysis was done using both descriptive statistics such as mean and standard deviation and inferential statistics namely Pearson's correlation and multiple regression analyses. The findings of the study were that strategic budgeting was the most prevalent cost accounting (Mean = 3.8696, Std.dev = 1.37612) meaning that it was highly practiced ; Strategic budgeting was a negative insignificant predictor of production efficiency (β = -.094 (p = .087) implying that use of strategic budgeting reduces production efficiency; strategic information for decision making negatively significantly influences production efficiency (β = -.121 (p = .009) meaning that use of strategic information decreases production efficiency and strategic analysis insignificantly positively (β = .005 (.922) influences production efficiency meaning that it increases production efficiency. The study concludes that strategic budgeting is the most prevalent practice; strategic budgeting negatively influences production; strategic information for decision making leads to decrease on production efficiency and strategic analysis leads to increase in production efficiency among manufacturing firms. The research findings may be significant to manufacturing industry policy makers in designing appropriate cost accounting strategies that maximizes the firm's performance. In addition, the research will provide new empirical evidence on the strategic cost accounting practices and performance of manufacturing firms and form a basis for future research in the area.

CHAPTER ONE
INTRODUCTION

This chapter outlines the background to the study, statement of the problem, objectives of the study, research hypotheses, scope of the study, justification of the study and the conceptual framework.

1.1 Background to the Study

The manufacturing sector has a great potential on promoting economic growth and competiveness in the country like Kenya. It is the third leading sector contributing to GDP in Kenya. The sector has experienced the fluctuations over the years under different financial conditions. It experienced the lowest real GDP growth rates in 2008 to 2009 as 1.7 percent in 2008 and improved to 2.6 percent in 2009 (East African Community Facts and Figures – 2010, March Issue, 2011). In the financial year 2010, the real GDP growth rate was 5.6 percent, revealing the improvement (East African Community Facts and Figures – 2011, October Issue, 2011). The lack of demand from the domestic market caused depreciation in shilling and international demand was largely hit by global financial crises which caused the slower growth in the manufacturing sector. In terms of gross domestic product (GDP), the share of manufacturing sector maintained in the last 10 years from 2000-2001 as 10 percent to 2009-2010. On the other side, investment a "booster" of an economy, according to (East African Community Facts and Figures – 2011, October Issue, 2011) has shown a decreasing trend from 2008 to 2010.

Although performance has been traditionally conceptualized in terms of financial measures, some scholars have proposed a broader performance construct that incorporates non-financial measures including among others market share, production efficiency, product quality, and company image. Extant research findings have shown that perceived measures of performance can be a reasonable substitute of objective measures of performance (Bamberger & Meshoulam, 2000) and have a significant correlation with objective measures of financial performance. Additionally, cross-industry organizational performance is influenced by external economic factors (Bamberger & Meshoulam, 2000); hence subjective evaluations may be even more appropriate than objective

measures in this study. Studies by Abdel-Kader & Wadongo, (2011) recognize the difficulty in obtaining objective measures of performance and suggest asking managers to assess their own firm's performance relative to others in the same industry or sector. To minimize the effects of random errors, researchers have suggested the use of multiple items to assess performance. Given this scenario, this study opted to use single items in order to assess the performance of the organizations to be studied namely production efficiency. Corporate production efficiency is essential for all the stakeholders, but especially for investors. The value of shareholders, defined as market value of a company is dependent on several factors: the current profitability of the company, its risks, and its economic growth essential for future company earnings. All of these are major factors influencing the market value of manufacturing firms (Branch, 2000). In this study, performance will be actualized using production efficiency which is concerned with producing goods and services with the optimal combination of inputs to produce maximum output for the minimum cost. To be productively efficient means the economy must be producing on its production possibility frontier. It requires all firms operate using best practices technological and managerial process (Abdel-Kader & Wadongo, 2011).

One possible mechanism of attaining this desired situation is employ strategic cost accounting practices (Branch, 2000). Strategic cost accounting practices as a variety of methods specially considered for manufacturing businesses so as to support the organization's infrastructure and cost management processes. Strategic cost accounting practices include: use of strategic budgeting, performance evaluation, strategic information for decision-making and strategic analyses among many others (Ittner and Larcker, 2002). Strategic cost accounting practices enable management to obtain relevant information for meaningful decision making (Alleyne and Weekes-Marshall, 2011). Uyar (2010) notes that the perceived importance of strategic cost accounting is driven by decreasing profitability, increasing costs and competition, and economic crises. Most of the research focused on changes in cost accounting practices, primarily in countries such as South Africa and Canada (for example Luther and Longden, 2001). However, some researchers noted what is often taught in schools is far different in the world of work and therefore creates a breach in knowledge between the practice and the theory. Hongren *et*

al, 2009 argued that cost accounting has not changed over the past years. However, Libby and Waterhouse (1996) were convinced that there were changes.

Prior studies on the extent of adoption of strategic cost accounting practices (Ndwiga, 2011; Uyar, 2010; Wijeywardena and Zoysa, 1999; Adler, Everett, and Waldron, 2000; Anand *et al.*, 2004; Abdel-Kader and Luther, 2006 and Thairu, 2009) indicate that strategic cost accounting practices are useful in improving management performance and competitive advantage. While Ndwiga (2011) uses descriptive research design to study cost accounting practices in single commercial bank, Uyar (2010) employs exploratory research design, to investigate cost and management accounting practices utilized by manufacturing companies operating in Istanbul, Turkey. Wijeywardena and Zoysa (1999) use comparative analysis to investigate the differences in the adoption of cost accounting techniques in Australia and Japan large manufacturing companies. Other studies (Adler, Everett, and Waldron, 2000; Anand *et al.*, 2004) use judgmental and convenient sampling techniques to study cost accounting techniques adopted by manufacturing firms in New Zealand and India. On the contrary, Abdel-Kader and Luther (2006) study cost accounting practices (CAPs) in the food and drinks industry in the U.K. but did not check on the extent of adoption of these practices. Similarly, a study by Thairu (2009) explores determinants of cost accounting changes in three private Hospitals in Nairobi using descriptive cross sectional survey design but did not focus on manufacturing firms in Nairobi City.

From the foregoing empirical evidence, strategic cost accounting practices are useful in improving production efficiency, management performance and competitive advantage. Prior researches use convenient sampling methods and exploratory or case study research designs and descriptive statistics; do not study firms in the manufacturing sector in Nairobi City. They employ primary data based on cross-sectional study units, but did not focus on manufacturing firms using correlational research design. Therefore, no research exists interrogating the extent of adoption of strategic cost accounting practices among manufacturing firms in Nairobi City, Kenya.

Empirical evidence on use of strategic budgeting (Melek, 2007; Tsui, 2001; Amalokwu and Obiajulum, 2008; Ambetsa, 2004; Wamae, 2008 and Muleri, 2001) show that it an important aspect of enhancing firms' performance and competitive advantage. Whereas, Melek (2007) used step-wise regression analysis to study the impact of budget participation on managerial performance via organizational commitment on the top 500 firms in Turkey, Tsui (2001) employs explanatory research design to investigate the effects of management accounting system and budget participation on managerial among Chinese firms. Other studies (Ambetsa, 2004; Wamae, 2008 and Muleri, 2001) use purposive sampling and exploratory research design to study budgeting control practices among commercial airlines, NGOs and social security funds in Kenya, but fail to use correlational research design to study strategic budgeting and performance of manufacturing firms in Kenya. On the contrary, Obiajulum and Asong(2008) use qualitative approach and step-wise regression analysis to investigate budgetary and management control practices in Guinness Nigeria plc.

Reviewed literatures show that use of strategic budgeting is an important aspect of enhancing firms' performance and competitive advantage. Prior researches use convenient and purposive sampling methods and exploratory, explanatory or case study research designs and descriptive statistics; study firms mainly in the NGO, social security funds and aviation sectors, but did not study manufacturing firms using correlational research design. Therefore, the effect of strategic budgeting on production efficiency of manufacturing firms in Nairobi City has not been studied.

Prior studies on strategic analysis of costs (Ndwiga, 2011; Njenga, 2006; Isa and Thye, 2006; Liaqat, 2006, Amalokwu and Obiajulum, 2008; Uyar, 2010; Wijevyardena and Zoysa, 1999) indicate that it drives firms' competitive advantage. While, some studies use descriptive research design, qualitative approach and step-wise regression analysis to study cost accounting practices in single firms (Ndwiga, 2011; Amalokwu and Obiajulum, 2008), Others (Njenga, 2006; Isa and Thye, 2006; Liaqat, 2006) employ DEA and random and stratified sampling techniques to investigate usage of cost accounting practices in manufacturing firms, relationship between cost X-efficiency and production efficiency listed firms, Malaysia and India; but fail focus on manufacturing firms in

Kenya using correlational research design. On the contrary, others (Uyar, 2010; Wijevyardena and Zoysa, 1999) study cost and management accounting practices using exploratory research design and comparative analysis in the economies of Turkey, Japan and Australia as opposed to manufacturing firms in Kenya.

Empirical evidence shows that conducting strategic analysis is critical in improving firms' competitive advantage. Previous studies researches use stratified and random sampling methods and exploratory and case study research designs, but did not study manufacturing firms in Nairobi using correlational research design. Therefore, the relationship between strategic analysis and production efficiency of manufacturing firms in Nairobi City is unknown.

Empirical evidence on strategic information for decision making (Aggrey *et al.*, 2010; Din *et al.*, 2007; Njenga, 2006; Isa and Thye, 2006) Ndwiga, 2011 and Amalokwu and Obiajulum, 2008) report that it is critical component in enhancing firms' performance. Whereas some studies (Aggrey *et al.*, 2010; Din *et al.*, 2007 and Njenga, 2006) use DEA and comparative analysis to study strategic information for decision making and performance of the large scale manufacturing sector in Pakistan, Uganda, Tanzania and Kenya, Others (Isa and Thye, 2006; Ndwiga, 2011) use random and stratified sampling techniques to explore the relationship between usage of cost accounting practices and production efficiency of manufacturing firms, but do not study manufacturing firms in Nairobi using correlational research design.

Reviewed empirical literatures show that strategic information for decision making is critical in enhancing firms' competitive advantage. Prior studies use stratified and random sampling techniques and employ case studies, descriptive research designs and DEA approaches but did not cover manufacturing firms using correlational research design. Therefore, it is unknown how the use strategic information for decision making affects production efficiency of manufacturing firms in Nairobi City.

1.2 Statement of Problem

The manufacturing firms have a great potential on promoting economic growth and competiveness in the country like Kenya. However, these firms have experienced the fluctuations over the years under different financial conditions. Previous studies focus on comparative analysis of cost accounting practices across countries but do not investigate the link between these practices and performance of manufacturing firms. Therefore, the extent of adoption of the strategic cost accounting practices by manufacturing firms in Nairobi is unknown. Given that the manufacturing sector has a great potential on promoting economic growth and competiveness in the country like Kenya, the effect of strategic budgeting, strategic analysis and strategic information for decision making on performance are not known. Therefore, the purpose of this study will be to evaluate the influence of strategic cost accounting practices on performance of manufacturing firms in Nairobi, Kenya.

1.3 Objectives of the Study

The general objective of this study was to analyze the influence of strategic accounting practices on production efficiency of manufacturing firms in Nairobi City, Kenya.

Specifically, the study sought to:

1. Establish extent of adoption of strategic cost accounting by the manufacturing firms in Nairobi City, Kenya.
2. Analyze the effect of strategic budgeting on production efficiency of manufacturing firms in Nairobi City, Kenya.
3. Establish the relationship between strategic analysis and production efficiency of manufacturing firms in Nairobi City, Kenya.
4. Assess the effect of strategic information for decision making on production efficiency of manufacturing firms in Nairobi City, Kenya.

1.4 Research Questions

1. What is the extent of adoption of strategic cost accounting by the manufacturing firms in Nairobi City, Kenya?

1.5 Research Hypotheses

This study was guided by the following research hypotheses:

1.4.1: Strategic budgeting has no effect on production efficiency of manufacturing firms in Nairobi City, Kenya.

1.4.2: There is no relationship between strategic analysis and production efficiency of manufacturing firms in Nairobi City, Kenya.

1.4.3. Strategic information for decision making has no effect on production efficiency of manufacturing firms in Nairobi City, Kenya

1.6 Scope of the study

The scope of this study is examined in terms of content, geographical and time scopes. In terms of the content scope, this study is limited to the broad business field of management accounting and its subfields of cost accounting, performance measurement and corporate strategy. Geographical scope is the second aspect of scope in this study. The study will be carried out in Nairobi City. It is capital city and commercial hub of Kenya, where most manufacturing firms are located. This study focuses on manufacturing firms based in Nairobi City. These firms are chosen because they contribute 10 % of GDP, 12.5 % of exports and 13 % of formal employment (CBK, 2013). Specifically, the study focussed on accounting practices and performance of manufacturing firms. In terms of time scope, the study was conceived between April 2015 and November 2015.

1.7 Significance of the Study

The findings from this study will be of significance to a number of partners in the manufacturing industry. First, the study would help the accounting policymakers, especially those at Nairobi County, to realize the need to have and implement cost accounting practices that maximize performance. Secondly, the study will generate knowledge linking cost accounting practices to performance of manufacturing firms which would guide managers in the planning for the limited financial resources allocated to the manufacturing activities of these firms.

Finally, the study may be helpful to all academicians in management accounting, financial accounting, auditing and costing in the furtherance of their studies in form of future research and in the operations at their work places. Lastly, the study is of academic interest and it further contributes to the larger scholarly literature on application of cost accounting practices in the manufacturing industry.

1.8 Conceptual Framework

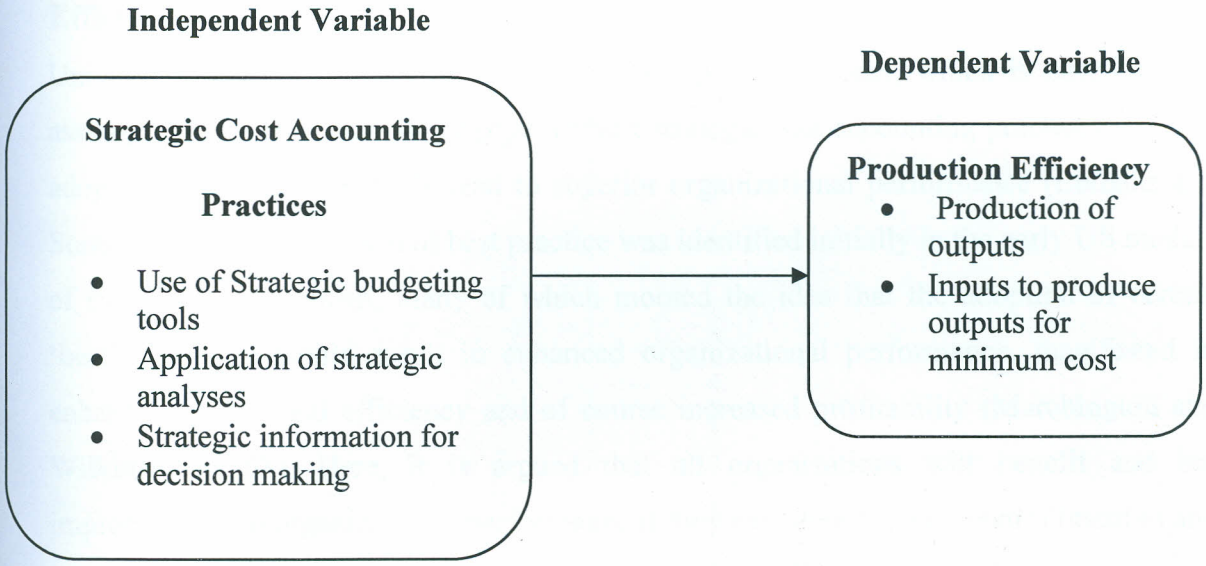

Figure 1.1: Strategic Cost Accounting Practices and Performance Relationship

Source: Adapted from Uyar (2010)

The above conceptual framework shows the relationship between cost accounting practices and production efficiency. Strategic cost accounting practices which is the independent variable has three dimensions namely, use of strategic budgeting tools, application of strategic analyses and strategic information for decision making. The dependent variable is the production efficiency which has two dimensions namely; production of outputs and inputs.

CHAPTER TWO

LITERATURE REVIEW

This chapter covers the review of all relevant theories, empirical studies and concepts on the subject and the research gap

2.1 Theoretical Review

2.1.1 Universalistic Theory Linking Strategic Cost Accounting to Production Efficiency

Universalistic theory is also known as the best practice model, which is based on the assumption that there is a set of superior/best strategic cost accounting practices and that adopting them will inevitably lead to superior organizational performance (Luthans and Summer, 2005). The notion of best practice was identified initially in the early US models of strategic management, many of which mooted the idea that the adoption of certain 'best' strategies would result in enhanced organizational performance, manifested in enhanced quality and efficiency and of course increased profitability (Marchington and Wilkinson, 2008). Here, it is argued that all organizations will benefit and see improvements in organizational performance if they can identify, gain commitment to and implement a set of best cost accounting practices. Thus, universalistic perspective maintains that firms will see performance gains by identifying and implementing best practice irrespective of the product market situation, industry or location of the firm (Pfeffer, 2001).

However, the notion of a single set of best cost accounting practices has been overstated. There are examples in every industry of firms that have very distinctive management practices, distinctive cost accounting practices which shape the core competences that determine how firms compete. What works well in one organization will not necessary work well in another because it may not fit its strategy, technology or working practices? Becker *et al* (2001) muses that organizational high performance work systems are highly idiosyncratic and must be tailored carefully to each firm's individual situation and specific context in order to provide maximum performance. These high performance work practices will only have a strategic impact therefore, if they are aligned and

integrated with each other and if the total cost accounting system supports key business priorities. This approach therefore ignores potentially significant differences between organizations, industries, sectors and countries.

2.1. 2 Configurational Theory Connecting Strategic Cost Accounting with Production Efficiency

A strategy's success turns on combining external fit and internal fit. A firm with bundles of cost accounting practices should have a high level of performance, provided it also achieves high levels of fit with its competitive strategy (Richard and Thompson, 1999). Emphasis is given to the importance of bundling strategic cost accounting practices and competitive strategy so that they are interrelated and therefore complement and reinforce each other. Implicit in is the idea that practices within bundles are interrelated and internally consistent, and has an impact on performance because of multiple practices. The idea of best practice might be more appropriate for identifying the choices of practices as opposed to the practices themselves. The good practices that do well in one successful environment should not be ignored altogether. Benchmarking is a valuable way of identifying areas of innovation and development that are practiced to good effect elsewhere by leading companies. But it is up to the firm to decide what may be relevant in general terms and what lessons can be learnt that can be adopted to fit its particular strategic cost accounting and operational requirements.

2.1.3: The Concept of Strategy

To understand the notion of strategic cost accounting practices, it is necessary to appreciate the concept of strategy upon which it is based. Johnson and Scholes (1999) define strategy as the direction and scope of an organization over the long term which achieves advantage for the organization through configuration of resources within a changing environment, to meet the needs of markets and fulfill shareholders expectations. Mintzberg *et al.* (1988) suggests that strategy can have a number of meanings namely a plan or something equivalent-a direction, a guide or cause of action; a pattern that is consistency in behavior over time; a perspective, an organizations way of doing things; a play, a specific manoeuver intended to outwit an opponent or a competitor. Robinson &

Mital (2000) recommend three critical ingredients for the success of a strategy. First, the strategy must be consistent with conditions in the competitive environment. It must take advantage of existing or projected opportunities and minimize the impact of major threats. Second, the strategy must place realistic requirements on the firm's resources. The firm's pursuit of market opportunities must be based not only on the existence of external opportunities but also on competitive advantages that arise from the firm's key resources. Finally, the strategy must be carefully executed.

2.1.4 The Concept of Strategic Cost Accounting Practices

Ittner and Larcker (2002) defines strategic cost accounting practices as a variety of methods specially considered for manufacturing businesses so as to support the organization's infrastructure and cost management processes. Strategic cost accounting practices include: use of strategic budgeting, performance evaluation, strategic information for decision-making and strategic analyses among many others.

Ittner and Larcker (2001) argued that due to the development of these new methods, the basic principles of cost accounting has changed to a more superior one that adds value to various practices. The literature has also indicated that some practices such as absorption costing and marginal costing have not been highly favored by most businesses. For example, Dugdale and Jones (2002) stressed that there is a limitation within these costing systems, since they do not provide an accurate method of recording costs to be exact in order to make sound management decisions.

Strategic cost accounting practices enable management to obtain relevant information for meaningful decision making (Alleyne and Weekes-Marshall, 2011). Uyar (2010) notes that the perceived importance of strategic cost accounting is driven by decreasing profitability, increasing costs and competition, and economic crises. Most of the research focused on changes in cost accounting practices, primarily in countries such as South Africa and Canada (for example Luther and Longden, 2001). However, some researchers noted what is often taught in schools is far different in the world of work and therefore creates a breach in knowledge between the practice and the theory. Hongren *et al.* (2009) argued that cost accounting has not changed over the past years. However, Libby and Waterhouse (1996) were convinced that there were changes. Burns *et al.* (1999) further

argued that there is evidence that cost accounting practices have changed over the last decade in developed countries such as the UK.

2.1.5 Production Efficiency of Manufacturing Firms

The measurement of organizational performance is not easy for business organizations with multiple objectives of profitability, production efficiency, employee satisfaction, productivity, growth, social responsibility and ability to adapt to the ever changing environment among other objectives. Although performance has been traditionally conceptualized in terms of financial measures, some scholars have proposed a broader performance construct that incorporates non-financial measures including among others market share, production efficiency, product quality, and company image.

Extant research findings have shown that perceived measures of performance can be a reasonable substitute of objective measures of performance (Wan-Jing & Tung, 2005) and have a significant correlation with objective measures of financial performance. Additionally, cross-industry organizational performance is influenced by external economic factors (Bamberger & Meshoulam, 2000); hence subjective evaluations may be even more appropriate than objective measures in this study. Studies by Abdel-Kader &Wadongo (2011) recognize the difficulty in obtaining objective measures of performance and suggest asking managers to assess their own firm's performance relative to others in the same industry or sector. To minimize the effects of random errors, researchers have suggested the use of multiple items to assess performance. Given this scenario, this study opted to use single items in order to assess the performance of the organizations to be studied namely production efficiency. Corporate production efficiency is essential for all the stakeholders, but especially for investors. The value of shareholders, defined as market value of a company is dependent on several factors: the current profitability of the company, its risks, and its economic growth essential for future company earnings. All of these are major factors influencing the market value of manufacturing firms (Branch, 2000). In this study, performance will be actualized using production efficiency which is concerned with producing goods and services with the optimal combination of inputs to produce maximum output for the minimum cost. To be productively efficient means the economy must be producing on its production possibility

frontier. It requires all firms operate using best practices technological and managerial process. By improving these processes, a company can extend its production possibility frontier outward so that efficient production yields more output than previously (Abdel-Kader &Wadongo, 2011).

2.2 Review of Empirical Studies

2.2.1 Adoption of Strategic Cost Accounting by the Manufacturing Firms

Using descriptive research design, Ndwiga (2011) studied the role of cost accounting practices in creating and sustaining competitive advantage of Equity Bank and found that the modern cost accounting practices provide very important skills and techniques in building competitiveness. The study concluded that the strategic cost accounting practices play an important role in the planning, developing, implementing and evaluating strategic competitive policies that result in a competitive advantage. However, the study used a descriptive research design as opposed to correlational research design, focused on a single firm in banking sector as opposed to manufacturing firms and explored the role of cost accounting practices as opposed to extent of adoption of strategic accounting practices by the manufacturing firms in Nairobi city.

A study by Uyar (2010) used exploratory research design to investigate cost and management accounting practices utilized by manufacturing companies operating in Istanbul, Turkey and found that the most widely used product costing method was job costing. The findings indicated that companies perceive traditional management accounting tools still important. However, new management accounting practices such as strategic planning, and transfer pricing were perceived less important than traditional ones. However, the study used an exploratory research design as opposed to correlational research design, focused on manufacturing firms in Istanbul, Turkey as opposed to manufacturing firms in Nairobi, Kenya.

Wijeywardena and Zoysa (1999) in a comparative analysis of cost accounting practices in Australia and Japan investigated the differences in the adoption of cost accounting techniques through a survey questionnaire which was mailed to 1000 largest manufacturing companies in each country. Findings of the comparative survey revealed

that cost accounting practices of Australian companies placed emphasis on cost control tools (e.g. budgeting, standard costing and variance analysis) at the manufacturing stage while Japanese companies focused attention on cost planning and cost reduction tools such as target costing at the product planning and design stage. However, the study was a comparative analysis as opposed to correlational study, focused on Australia and Japanese large manufacturing firms as opposed to Kenyan manufacturing firms.

Using a judgmental sampling technique, Adler, Everett, and Waldron (2000) conducted a survey cost accounting techniques adopted by New Zealand manufacturing businesses and found that traditional cost accounting techniques, such as full costing, direct costing and standard costing were found to be used more often than advanced cost accounting techniques, such as strategic cost accounting. However, the study used judgmental sampling technique, focused on New Zealand manufacturing businesses as opposed to Kenyan manufacturing firms.

Anand *et al.* (2004) in their study of cost management practices such as accounting for overheads, applications of budgetary control and standard costing in corporate India and found that the firms were successful in capturing accurate cost and profit information from their ABC cost systems for value chain and supply chain analysis. The results suggest that the firms have better insight for benchmarking and budgeting with ABC cost system yet the consistency in their priority of budget goals is lacking unlike the firms who are using traditional costing systems. However, the study used convenient sampling technique, focused on manufacturing businesses in India as opposed to manufacturing firms in Kenya.

Abdel-Kader and Luther (2006) studied cost accounting practices (CAPs) in the food and drinks industry in the U.K. in order to understand the level of CAP's sophistication and the factors that affect implementation of CAPs in this industry. The research methodology used in this study was a survey questionnaire sent to 650 executives of the industry. The study found that as companies moved into a more uncertain environment, the sophistication level of cost accounting practices increased. Likewise, as their power relative to customers' diminished, companies moved up the stages of evolution. Analysis

of the cost accounting practices used suggested that the cost accounting systems employed in many food and drinks companies were not particularly sophisticated. Taking the industry as a whole, there was little evidence of cost accounting directly connected with 'value creation'. However, the study used convenient sampling technique, focused on food and drinks industry in U.K.as opposed to manufacturing firms in Kenya.

Liaqat (2006) carried out an empirical study to find out the application of strategic cost accounting techniques in Indian industry through a survey of 530 member companies of the National Association of Financial Directors and Cost Controllers. Sixty three companies responded which constituted the sample; a response rate of about 12%. The sample was stratified in two segments; ABCM user firms and Non ABCM user firms. A five point Likert scale was used. The focus of the study was to find evidence on how widely traditional and strategic cost accounting practices were adopted by Indian industry. The findings were that improvement of overall profitability and cost reduction were the motivating factors for using cost accounting in Indian companies. There was a positive but insignificant association between the adoption of ABC and company characteristics (e.g. degree of customization, pressure of competition, business size, and proportion of overhead to total cost) at 10% level. However, the study focused on Indian large manufacturing firms as opposed to Kenyan manufacturing firms.

Using random sampling technique, Isa & Thye (2006) examined the usage of cost accounting practices in manufacturing firms in Malaysia. They also studied the relationship between product variety, complexity of production process, level of competition, company size, overhead expenses and usage of advanced cost accounting practices. A total of 75 usable responses were received, that represented a response rate of 15 %. Respondents comprised of senior level managers, including Chief Executive Officers, General Managers and Management Accountants. In this study, the measures for traditional cost accounting techniques (TCAT) and advanced cost accounting techniques (ACAT) were adopted from Waldron and Everett (2004). The TCAT were represented by four techniques: full costing, standard costing, job order costing and process costing. The ACAT comprised thirteen techniques: Activity-Based Costing, Activity-Based Management, Target Costing, Kaizen Costing, Value Added Accounting, Cost of Quality,

Economic Value Added, Life Cycle Costing, Target Cost Planning, Cost Modeling, Strategic Cost accounting, Throughput Accounting and Back Flush Costing. However, the study focused on Malaysian large manufacturing firms as opposed to Kenyan manufacturing firms. It used exploratory research design as opposed to correlational research design.

Salawu *et al.* (2012) did a survey of Activity Based Costing Adoption Among Manufacturing Companies in Nigeria and found that inability of the traditional cost systems to provide relevant cost was the most highly ranked reason in their decision to adopt ABC. Traditional methods of allocating overhead were therefore believed to be deficient in terms of improving global competitiveness. Also, 60% of the respondents had adopted ABC due to increased ranges of products, competition and increased overhead. Familiarity with and adoption of ABC was found to be across the manufacturing, more than half of the sample are familiar with it. The 40% of respondents who have not adopted ABC cited the cost and complexity involved with implementation as the main reason in non-adoption. However, cost of implementing ABC was enormous which hinder the small scale manufacturing from adopting it. This result may reflect the fact that larger firms are more likely to have the diverse mix of products or services that makes the use of ABC advantages. Consequently, the study recommended that the companies who have not adopted ABC because of its high cost of implementation should endeavor to consider its adoption because in the long run the benefits derive from it will outweigh its cost. On the contrary, the study surveyed activity based costing adoption among Nigerian manufacturing firms as opposed to all strategic accounting practices among Kenyan manufacturing firms. It used exploratory research design as opposed to correlational research design.

Using descriptive statistics, Waweru (2004) studied the cost accounting practices and cost accounting techniques used by publicly quoted companies in Kenya and the type of cost accounting reports produced and the frequency of their production. The study also explored the cost accounting techniques used by these companies and the extent of their utilization. The findings of the study were that there was no significant relationship between type and process of budgeting and the ownership and sector of the company. The

most important purpose of cost accounting reports were planning and control. Most of the cost accounting reports are produced monthly. There does exist a significant gap between cost accounting theory and cost accounting practice. However, there is limited application of quantitative cost accounting techniques in Kenya. There is preference of simple cost accounting techniques to the complex techniques. This is probably due to the cost involved and the complexity of these elaborate techniques which may outweigh their benefits. The study recommended that companies in Kenya should move towards strategic cost accounting. However, the study did not test the extent of adoption of strategic cost accounting practices among manufacturing firms in Nairobi, Kenya.

Another study by Thairu (2009) on determinants of cost accounting changes in three private Hospitals in Nairobi using descriptive cross sectional survey design found that private hospitals had adopted many modern cost accounting techniques. The findings suggest the determinants of cost accounting change included high competition, advancement in technology, need for financial and non financial measures, production efficiency, board members expectation, statutory and regulatory bodies requirements as well as availability of resources. The study revealed that high accounting staff turnover, inadequate staffs, poor communication with line managers, strict government and regulatory bodies' requirements and difficulties in accessing strategic information about competitors as the main factors that hinder cost accounting change. However, the study focused on private hospitals in Nairobi as opposed to manufacturing firms in Nairobi City.

Using data envelopment analysis (DEA) approach, Njenga (2006) investigated the relationship between cost X-efficiency and production efficiency of companies listed in the Nairobi Securities Exchange in Kenya. The study findings were that Cost X-inefficiency may arise because managers use more input than would a best-practice firm (technical inefficiency) or because they employ an input mix that does not minimize cost for a given input vector, moreover its established that X-inefficiency arises from the fact that "neither individuals nor firms work as hard, nor do they search for information as effectively, as they could." Moreover the study findings establish that firms that sell assets to increase their operating efficiency are typically poor performers. Firms are to

sell their own assets if they find that alternative funding is too expensive and thus portend that total assets and cost of raw material and sales expenses significantly leads to a higher firm performance. On the contrary, the study surveyed cost-X- efficiency and production efficiency among listed firms as opposed to extent of adoption of strategic accounting practices among Kenyan manufacturing firms. It used exploratory research design and DEA approach as opposed to correlational research design and multivariate regression analysis.

From the foregoing empirical evidence, strategic cost accounting practices are useful for purposes of improving production efficiency, management performance and enhancing competitive advantage. Prior researches use convenient sampling methods and exploratory or case study research designs and descriptive statistics; do not study firms in the manufacturing sector in Nairobi City. They employ primary data based on cross-sectional study units, but fail to study manufacturing firms using correlational research design. Therefore, no research exists interrogating the extent of adoption of strategic cost accounting practices among manufacturing firms in Nairobi City, Kenya.

2.2.2. Effect of Strategic Budgeting on Production Efficiency of Manufacturing Firms

Melek (2007) used step-wise regression analysis to study the impact of budget participation on managerial performance via organizational commitment on the top 500 firms in Turkey. The findings of the study were that the effect of budget participation and organizational commitment on managerial performance was positive and significant. In addition, the study found that the managerial performance scores were found to increase when the interaction score between budget participation and organizational commitment increased meaning that high interaction between budget participation and organizational commitment provides appropriate condition, for high managerial performance. However, the study uses convenient sampling and tests the effect of budget participation on managerial performance as opposed to production efficiency. It dwelt on general firms as opposed to manufacturing firms and employed explanatory research design as opposed to correlational research design.

In a study based on China and Caucasian cultures Tsui (2001) investigated the effects of management accounting system and budget participation on managerial performance and found that the relationship between management accounting system information and managerial performance of Chinese participation was negative but positive for Caucasian managers. However, the study uses convenient sampling and tests the effect of management accounting system and budget participation on managerial performance as opposed to organizational performance. It dwelt on cross-cultural differences as opposed to manufacturing firms and employed explanatory research design as opposed to correlational research design.

Using qualitative approach and descriptive statistics, a study by Obiajulum and Asong (2008) in Nigeria on budgetary and management control practices (budget being the tool for management control in Guinness Nigeria plc found that budgets could facilitate the creating and sustaining of competitive advantages by enabling the following management functions: forecasting and planning, communication and coordination, motivational device evaluation and control and decision making. However, the study uses purposive sampling and fails to test the effect of strategic budgeting on performance. It only explored budgetary and management control practices as opposed to cause and effect of strategic budgeting and production efficiency in manufacturing firms and employed case study as opposed to correlational research design.

Ambetsa (2004) conducted a survey on budgeting control practices by commercial airlines operating at Wilson Airport, Nairobi using exploratory research design. The findings of the study were that commercial airlines faced numerous challenges including: budget evaluation deficiencies, lack of full participation of all individuals in the preparation of the budget and lack of top management support. The conclusions of the study were that; airlines operate and use budgets to plan implement and evaluate their business performance; all enterprises make plans using budgets some in a systematic and formal way, while others in an informal manner but still have some form of budgetary control and budgetary control practices. Therefore the issue is not whether to prepare a budget but rather how to do it effectively. However, the study focuses on small sample, uses purposive sampling and it did not to test the effect of strategic budgeting on

production efficiency. It only explored commercial airlines as opposed to manufacturing firms and employed exploratory as opposed to correlational research design.

Another study by Wamae (2008) on challenges of budgeting at National Social Security Fund (NSSF) used exploratory research design and purposive sampling of 9 board of directors and 16 senior managers at NSSF and found that major challenge facing budgeting was lack of management commitment, that is, various head of department did not take budget seriously leading to giving ambitious budgets which would end up not achieving target, leading to complaints from the board. The conclusions of the study were that budgeting was very effective at NSSF as they served their purpose assisting in control, used as a means by which management communicates by other level of department. In addition, the process of budgeting at NSSF faced some challenges which were inability to achieve the required value of business inadequate authority to spend despite allocation, cost inflation, poor participation and poor co-ordination of the exercise. However, the study was a case study, uses purposive sampling and fails to test the effect of strategic budgeting on performance. It only explored budgeting challenges as opposed to cause and effect of strategic budgeting and production efficiency in manufacturing firms and employed case study as opposed to correlational research design.

Using exploratory research design, Muleri (2001) studied budgeting practices in Non-governmental organization in Kenya and found that most organization used strategic budgeting tools such as zero based and philosophies to reduce financial management. The study also found that there was a limitation on budgeting process which led to cost cutting to achieve cost effectiveness and that there was lack of solid based mechanisms to enforce budgeting controls as a motivator. The conclusions of the study were that although profit was the main indicator of performance in public sector, strategic budget management should be measured against the background of sound financial policies; that strategic budgeting was well accepted in evaluation and generally used to communicate plans and operations. However, the study focuses on small sample, uses purposive sampling and fails to test the effect of strategic budgeting on production efficiency. It dwelt on non-

governmental organizations as opposed to manufacturing firms and employed exploratory as opposed to correlational research design.

Reviewed literatures show that use of strategic budgeting is an important aspect of enhancing firms' production efficiency and competitive advantage. Prior researches use convenient sampling methods and exploratory or case study research designs and descriptive statistics; study firms in the NGO, social security funds and aviation sectors. They employ secondary data based on time series study units, but did not study manufacturing firms using correlational research design. Therefore, the effect of strategic budgeting on production efficiency of manufacturing firms in Nairobi City has not been studied.

2.2.3 Relationship between Strategic Analysis and Production Efficiency of Manufacturing Firms

Using data envelopment analysis (DEA) approach, Njenga (2006) investigated the relationship between cost X-efficiency and production efficiency of companies listed in the Nairobi Securities Exchange in Kenya and found that strategic cost analysis does not enhance performance of listed firms since it does not minimize cost for a given input vector. On the contrary, the study surveyed among listed firms as opposed to Kenyan manufacturing firms. It used exploratory research design and DEA approach as opposed to correlational research design and multivariate regression analysis.

Using random sampling technique, Isa &Thye (2006) examined the usage of cost accounting practices in manufacturing firms in Malaysia. They also studied the relationship between product variety, complexity of production process, level of competition, company size, overhead expenses and usage of advanced cost accounting practices. The findings of the study were strategic analysis of costs using Target Costing, Kaizen Costing, Value Added Accounting, Cost of Quality, Economic Value Added, Life Cycle Costing and Target Cost Planning had a positive impact on performance of Malaysian firms. However, the study focused on Malaysian large manufacturing firms as opposed to Kenyan manufacturing firms. It used exploratory research design as opposed to correlational research design.

Liaqat (2006) investigated the application of strategic cost accounting techniques in Indian industry using stratified sampling technique and found that improvement of overall profitability and cost reduction were the motivating factors for using cost accounting in Indian companies. There was a positive but insignificant association between the adoption of ABC and company characteristics (e.g. degree of customization, pressure of competition, business size, and proportion of overhead to total cost) at 10% level. However, the study focused on Indian large manufacturing firms as opposed to Kenyan manufacturing firms.

Using descriptive research design, Ndwiga (2011) studied the role of cost accounting practices in creating and sustaining competitive advantage of Equity Bank and found positive and significant relationship between strategic analysis of costs and performance of Equity bank Limited and that other modern cost accounting practices provide very important skills and techniques in building competitiveness. However, the study used a descriptive research design as opposed to correlational research design, focused on a single firm in banking sector as opposed to manufacturing firms in Nairobi city.

Using qualitative approach and descriptive statistics, a study by Obiajulum and Asong (2008) in Nigeria on budgetary and management control practices found that budgets and strategic analysis of costs positively facilitated the creation and sustenance of competitive advantage of Nigerian firms. However, the study uses purposive sampling and employed case study as opposed to correlational research design.

A study by Uyar (2010) used exploratory research design to investigate cost and management accounting practices utilized by manufacturing companies operating in Istanbul, Turkey and found that the most widely used product costing method was job costing. However, the study used an exploratory research design as opposed to correlational research design, focused on manufacturing firms in Istanbul, Turkey as opposed to manufacturing firms in Nairobi, Kenya and did not test the relationship between strategic cost accounting and performance.

Wijeywardena and Zoysa (1999) in a comparative analysis of cost accounting practices in Australia and Japan investigated the differences in the adoption of cost accounting techniques through a survey questionnaire which was mailed to 1000 largest manufacturing companies in each country. The findings of the study were that cost accounting practices of Australian companies placed emphasis on cost control tools (e.g. budgeting, standard costing and variance analysis) at the manufacturing stage while Japanese companies focused attention on cost planning and cost reduction tools such as target costing at the product planning and design stage. However, the study was a comparative analysis as opposed to correlational study, focused on Australia and Japanese large manufacturing firms as opposed to Kenyan manufacturing firms.

Empirical evidence shows that conducting strategic analysis is an important aspect of enhancing firms' competitive advantage. Previous studies researches use convenient sampling methods and exploratory budgetary to study management control practices; traditional cost accounting practices but fail to study manufacturing firms using correlational research design. Therefore, the relationship between strategic analysis and production efficiency of manufacturing firms in Nairobi City is unknown.

2.2.4 Effect of Strategic Information for Decision Making on Production Efficiency of Manufacturing Firms

A comparative analysis study by Aggrey *et al.* (2010) investigated the relationship between firm size and technical efficiency in East Africa manufacturing firms using DEA approach and GLS technique. Output was all output produced by firm in a year and inputs were cost of raw material solid and liquid fuel, electricity and water. They found negative association between firm size and technical efficiency in both Uganda and Tanzania manufacturing firms. However, the study was a comparative analysis as opposed to correlational study, focused on Uganda and Tanzania manufacturing firms as opposed to Kenyan manufacturing firms and did not test the relationship between strategic information for decision making on production efficiency.

Din *et al.* (2007) investigated the strategic information for decision making and technical efficiency of the large scale manufacturing sector in Pakistan using DEA approach using

a sample of 101 industries for 2 periods as 1995 to 1996 and 2000 to 2001.Inputs included were capital, labor, industrial cost and non-industrial cost and output was contribution of GDP. The findings of the study were that strategic information and technical efficiency had a positive and significant relationship at 5 % significance. However, the study uses DEA methodology as opposed to multivariate regression analysis and focused on large manufacturing firms in Pakistan.

Njenga (2006) used Data Envelopment Analysis (DEA) approach to investigate the relationship between cost X-efficiency and production efficiency of companies listed in the Nairobi Securities Exchange in Kenya and found that strategic information for decision making affected performance of listed firms negatively since it did not lead to minimization of cost for a given input vector. On the contrary, the study surveyed only listed firms as opposed to manufacturing firms. It used exploratory research design and DEA approach as opposed to correlational research design and multivariate regression analysis.

Using random sampling technique, Isa and Thye (2006) examined the usage of cost accounting practices in manufacturing firms in Malaysia and found that the strategic information for decision making had a positive significant influence on performance of Malaysian firms at 10 % level of significance. However, the study focused on Malaysian large manufacturing firms as opposed to Kenyan manufacturing firms. It used exploratory research design as opposed to correlational research design. Another study by Liaqat (2006) investigated the application of strategic cost accounting techniques in Indian industry using stratified sampling technique and found that a significant positive association between the use of strategic information for decision making and company performance at 5 % level of significance. However, the study focused on Indian large manufacturing firms as opposed to Kenyan manufacturing firms.

Using descriptive research design, Ndwiga (2011) studied the role of cost accounting practices in creating and sustaining competitive advantage of Equity Bank and found positive and significant relationship between strategic information use and performance of Equity bank Limited and that other modern cost accounting practices provide very

important skills and techniques in building competitiveness. However, the study used a descriptive research design as opposed to correlational research design, focused on a single firm in banking sector as opposed to manufacturing firms in Nairobi city.

A study by Obiajulum and Asong (2008) in Nigeria used qualitative approach and descriptive statistics to study budgetary and management control practices found that budgets and use of strategic information for decision making was significantly positively related to competitive advantage of Nigerian firms. However, the study uses purposive sampling and employed case study as opposed to correlational research design.

Reviewed empirical literatures show that strategic information for decision making is critical in enhancing firms' competitive advantage. Prior studies use purposive sampling methods and employ case studies, descriptive research designs and DEA approaches but fail to study manufacturing firms using correlational research design. Therefore, it is unknown how the use strategic information for decision making affects performance of manufacturing firms in Nairobi City.

Empirical evidence shows that strategic cost accounting practices are useful for purposes of improving production efficiency, management performance and enhancing competitive advantage. However, no research exists interrogating the extent of adoption of strategic cost accounting practices among manufacturing firms in Nairobi City, Kenya. Existing strategic management and cost accounting literature show diverse relationships exist between strategic budgeting, strategic analysis, strategic information for decision making and firm performance but none relates these variables using correlational research design for manufacturing firms in Nairobi City. Therefore, it is unknown how strategic cost accounting practices influence production efficiency of manufacturing firms in Nairobi City, Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents detailed descriptions of the activities that shall be conducted to actualize the study. It discusses the research design that shall be used, the study population, data collection instruments, tools of data analysis and methods of presenting data.

3.1 Research Design

Creswell (2014) observes that research design begins with selection of the topic and a paradigm. Research paradigm is a broad view or perspective of a study or patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished (Creswell, 2014).The study employed a correlational research design which involves relating two or more variables and allows predictions of outcomes based on causative relationships between the variables. According to Mugenda and Mugenda (2003), correlational research explores the relationship between variables, that is, the effect of one thing on another and more specifically, the effect of one variable on another. Mugenda and Mugenda (2003) contend that correlational research has the advantage of being relatively cheap and it is used for the current study so as to assess the relationships between study variables.

3.2 Study Area

The study area was Nairobi City, the capital of Kenya. It is located at coordinates 1.28^{0}' S 36.82^{0}'E at altitude of 1,724 m (5,656 ft) with a population of 3,038,553 (GoK, 2009) covering an area of 684 km^2. It is a commercial and industrial hub. The city and its surrounding area form the Nairobi County. The city was founded as a railway camp in 1899. It is so big that it is considered as one of the biggest in the whole of Africa. Dubbed as the Green City in the Sun, Nairobi is a bustling metropolitan with many protected nature reserves found within the city. Surrounded by several expanding villa suburbs on the outskirts, the urban city center is home of thousands of Kenyan manufacturing firms and headquarters of over 100 major international companies and organizations. Nairobi is surrounded by the mountains of Mt. Kenya on the north and Mt. Kilimanjaro in the

southeast. It located adjacent to the eastern edge of the rift valley, making it vulnerable to occasional earthquakes and minor tremors. The Ngong Hills are the most prominent geographical feature of the city, which look like knuckles of the back of hands facing the sky.

3.3 Target Population of the Study

The target population for this study was all the 455 manufacturing companies subscribed to the Kenya Association of manufacturers membership register in Kenya as at April 2015.

3.4 Sample Design

Proportionate sampling method was applied to arrive at the study sample size, since the population in different manufacturing firms were considered heterogeneous, implying that a simple random sample was unrepresentative. This ensured that each manufacturing subsector was represented (Creswell, 2014). According to Mugenda and Mugenda (2003) at least 10% of the target population was important for the study. The study therefore involved 46 manufacturing companies in Nairobi City. Table 3.1 shows how the sample size was arrived at.

Table 3.1: Sample Size Determination

Sector	No. of Firms	Sample size (10%)
Building	6	1
Food, Beverages	100	10
Chemical	62	6
Energy	42	4
Plastics	54	5
Textile	38	4
Wood Products	22	2
Pharmaceutical	20	2
Metal and Allied	38	4
Leather	8	1
Motor	17	2
Paper	48	5
Total	**455**	**46**

Source: Kenya Association of Manufacturers Register, 2015.

3.5 Data Collection Methods

The researcher used both primary and secondary data. A questionnaire **(see Appendix I)** with closed and open-ended questions was used to collect the primary data. The questionnaire was pre-tested with two academic advisers and 10 middle level managers to confirm clarity of the questions.

3.5.1 Sources of Data

Primary data was collected from the operations and or production managers from each firm and secondary data was collected using desktop review mainly from audited financial statements of these firms, journals, books and magazines.

3.5.2 Data Collection Procedure

A pilot test was carried on 10 respondents who were excluded from the main study. The data was collected using a questionnaire and this was chosen because it is quite efficient. Parts I were questions relating to a brief background of respondents in the study. Part II consisted of questions relating to the independent variables identified which were used in analysing the relationship between independent variables and dependent variable. The questionnaires were dropped and picked up later from the respondents. Data obtained was scrutinized for any errors in instruments and to remove bias, the services of research assistants were sought to assist in data collection.

3.5.3 Reliability Test for Data Collection Instrument

Reliability of the questionnaire were done uisng a pilot test which sought to answer the question, does the questionnaire consistently measure whatever it purported to measures? When a questionnaire is used, establishing reliability commonly involves administration of the questionnaire or portions of the questionnaire to the same respondents at different times or under different circumstances in order to assess how stable the answers are. The instrument is deemed to be reliable at Cronbach's Alpha of .701 (Kombo, 2006).

Table 3.5: Summary of Cronbach's Alpha Reliability Test Results

Construct	No. of Items	Cronbach's Alpha
Strategic budgeting	3	0.850
Strategic information for decision making	3	0.789
Strategic analysis	3	0.721
Production efficiency	2	0.814

Source: Field Data, 2016

Strategic budgeting, strategic information for decision making, strategic analysis and production efficiency had alpha of 0.850,0.789, 0.721,and 0.814 respectively indicating strong internal consistency among measures of variable items.

3.5.4 Validity Test for Data Collection Instrument

Validity is the amount of systematic or built-in error in measurement (Kombo, 2006). Validity was established using a panel of experts /academic advisers. The basic principle for establishing validity is the same as for corroborating audit observations and conclusions generally, that is, compared to evidence from different sources and of a different nature.

3.6 Data Analysis

The study adopted correlational research approach which is used to summarize the characteristics of the respondents. The quantitative data was analysed by use of both the descriptive and inferential statistics. The descriptive statistics involved the use of mean, frequency, percentages and standard deviation while inferential statistics entailed use of Pearson correlation and multiple regression analyses.

3.6.1 Model Specification

In order to exhibit the effect of strategic cost accounting practices on the performance of manufacturing firms in Nairobi City, Kenya, the estimation model used by Kutner *et al.* (2004) and Ndwiga (2011) was adopted and modified as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + e_i \quad (3.1)$$

Where:

Y_i= is the production efficiency rating of respondent i for manufacturing firm i

β_0 = refers to time-invariant firm-specific effects.

β_1, β_2, and β_3 = Coefficients.

X_1= Use of Strategic budgeting tools.

X_2 = Application of strategic analyses.

X_3 = Strategic information for decision making.

i = for i= 1,2….n representing respondent for manufacturing firm i.

e_i = is a random disturbance.

3.7 Data Presentation

Data was presented using descriptive statistics involving the use of frequencies and percentages will be used to summarize data which was presented in tables, matrices, graphs and pie charts.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

The chapter presents the results and discussions of the statistical analysis undertaken on the study variables discussed in the foregoing chapters. The first part presents the analysis of demographic characteristics of the respondents and the rest is on the results based on the objectives of the study.

4.1 Response Return Rate

The researcher administered the questionnaires in person to the respondents. Some respondents filled the questionnaires in the researcher's presence and returned them immediately. Others opted to fill them at their own free time. Out of the 46 questionnaires administered to the respondents, all of them were returned constituting a response rate of 100 % of the administered questionnaires.

4.2 Demographic Features of the Sample

The study sought to establish the background of the respondents in the study in terms of gender, age, education levels and years of service. The results were as shown in following sections.

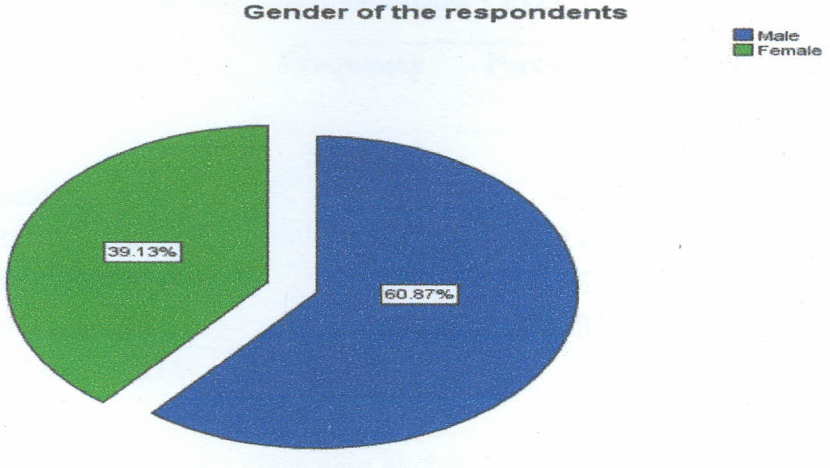

Figure 4.1: Gender of Respondents

Source: Field Data, 2016

Figure 4.1 indicates that 60.87 % of the respondents are males while 39.13 % of them were females. This implies that majority of employees in manufacturing firms in Nairobi City are males, hence the data obtained was gender biased.

Table 4.1 Age of the Respondents

Range	Frequency	Percent	Valid Percent	Cumulative Percent
18-25 years	5	10.9	10.9	10.9
26-30 years	6	13.0	13.0	23.9
31-35 years	15	32.6	32.6	56.5
Above 35 years	20	43.5	43.5	100.0
Total	**46**	**100.0**	**100.0**	

Source: Field Data, 2016

Table 4.1 indicates that majority (43.5%) of the respondents were aged above 35 years implying that it a very active and productive age bracket. Only 10.9% were aged between 18-25 years implying that manufacturing firms employ few school leavers.

Table 4.2 Respondents Highest Education Level

Education Level	Frequency	Percent	Valid Percent	Cumulative Percent
Secondary level	3	6.5	6.5	13.0
College level	18	39.1	39.1	52.2
University level	22	47.8	47.8	100.0
Total	**46**	**100.0**	**100.0**	

Source: Field Data, 2016

The findings in the Table 4.2 show that 47.8 % of the respondents are university degree holders, 39.1% have attained college education level, and only 6.5 % have are secondary school leavers. This implies that data for the study was obtained from learned respondents who have easily got adopted to using strategic accounting practices hence the reliability of the data.

Table 4.3: Respondents' Years of Service to the Company

Years of Service	Frequency	Percent	Valid Percent	Cumulative Percent
Below 1 year	9	19.6	19.6	19.6
2-4 years	10	21.7	21.7	41.3
5-7 years	10	21.7	21.7	63.0
Above 7 years	17	37.0	37.0	100.0
Total	**46**	**100.0**	**100.0**	

Source: Field data, 2016

Table 4.3 shows that majority 37.0 % of employees had worked in their respective companies for over 7 years which is an indication of low labor turnover, 19.6 % had worked for the period less than 1 year. This implies that the data was obtained from respondents who had gotten experience on the operations of their organizations.

4.3 Extent of Adoption of Strategic Cost Accounting Practices by manufacturing firms

To achieve this objective, descriptive statistics were computed and the results are summarized in the Table 4.4.

Table 4.4: Descriptive Statistics on Extent of Adoption of Strategic Cost Accounting Practices By manufacturing firms

Cost Accounting Practice	5	4	3	2	1	Mean	Std. Dev
a. Strategic Budgeting	22(47.8%)	9(19.6%)	7(15.2%)	3(6.5%)	5(10.9%)	3.8696	1.37612
b. Strategic Information for decision making	3(6.5%)	7(15.2%)	23(50%)	9(19.6%)	4(8.7%)	2.9130	0.98491
c. Strategic Analysis	5(10.9%)	7(15.2%)	18(39.1%)	15(32.6%)	1(2.2%)	3.0000	1.01105

Key: *Very high=5, High =4, Moderate=3, Low=2, Very low=1*
Source: Field data, 2016

Table 4.4 indicates that majority of the respondents believed that strategic budgeting was the most prevalent cost accounting practice among manufacturing firms in Nairobi City (Mean = 3.8696, Std.dev = 1.37612). This implies that strategic budgeting was highly practiced cost accounting practice. Specifically, majority of respondents indicated that (47.8 %) that extent of adoption for strategic budgeting was very high among manufacturing firms in the sample. Only 10.9 % indicated that the extent of adoption of strategic budgeting was very low. These results are consistent with the findings of Wijeywardena and Zoysa (1999) who revealed that cost accounting practices of Australian companies placed emphasis on cost control tools (e.g. strategic budgeting, standard costing and variance analysis) at the manufacturing stage while Japanese companies focused attention on cost planning and cost reduction tools such as target costing at the product planning and design stage.

4.4 Effect of Strategic Budgeting on Production Efficiency of manufacturing firms

In order to assess the effect of strategic budgeting on production efficiency, Pearson's correlation and multiple regression analyses were performed and the results are summarized in the Tables 4.5 and 4.6.

Table 4.5: Correlations of Strategic Budgeting with Production Efficiency of manufacturing firms

Variables	1	2
1. Strategic Budgeting	1	
2. Production Efficiency	-.161*	
	(0.011)	1

Source: Field data, 2016

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.5 indicates that strategic budgeting had a negative significant association with production efficiency (r = -.161, p =.011). This implies that use of strategic budgeting by manufacturing firms leads to decline in production efficiency. These results are in tandem with the findings of Tsui (2001) who found that the relationship between management

accounting system information and managerial performance of Chinese participation was negative. However, the findings are at variance with those of Isa and Thye (2006) and Obiajulum and Asong (2008) who found a positive and significant (p =0.001) relationship between budgeting and managerial performance.

The correlation coefficient of this association however, is small (r < -.50) indicating that some other variables might be influencing the associations between the variables as a result, further analysis permitting all variables that influence manufacturing production efficiency at once is necessary (Maddala, 2005).Multiple regression analysis, a multivariate analysis technique is used to estimate equation 3.1. Table 4.6 presents multiple regression results on the influence of strategic cost accounting practices on performance of manufacturing firms.

Table 4.6: Multiple Regression Analysis Estimation Results on the Influence of Strategic Cost Accounting Practices on Production Efficiency of manufacturing firms

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.316	0.273		12.134	0.000		
Strategic Analysis	0.005	0.053	0.006	0.098	0.922	0.993	1.007
Strategic Budgeting	-0.094	0.054	-0.111	-1.720	0.087	0.914	1.094
Strategic information for decision making	-0.121	0.046	-0.170	-2.631	0.009	0.916	1.092
R	0.229						
R^2	0.052						
Adj.R^2	0.041						
Durbin-Watson	1.88						

a. Dependent Variable: Production efficiency

Source: Field data, 2016

Results of the multiple regression analysis (Table 4.6) indicate that strategic budgeting was a negative insignificant predictor of production efficiency (β = -.094 (p = .087). This value is statistically insignificant since the p-value is less than 0.05. It can be inferred from this value that a unit change in strategic budgeting leads to a decrease in production efficiency of 0.094, all things being fixed. This result corroborates the findings of Tsui (2001) who found that the relationship between management accounting system

(2001) who found that the relationship between management accounting system information and managerial performance of Chinese participation was negative. However, the findings are at variance with those of Isa and Thye (2006) who found a positive and significant (p = 0.001) relationship between budgeting and managerial performance.

R^2 is 0.052. The adjusted R^2 is 0.041. The shrinkage in this case is 0.011 which is below the level of 0.5 suggested by Field (2005) and implies that the model is valid, has stability for prediction and predicts variance of production efficiency among manufacturing firms at 5.2 %. In addition, the variance inflation factors (VIF) were less than 2.0 which show that there was no multi-collinearity among the three predictor variables.

4.5: Effect of Strategic Information for Decision making on Production Efficiency of manufacturing firms

In order to assess the effect of strategic information for decision making on production efficiency, Pearson's correlation and multiple regression analyses were performed. The results below present how strategic information for decision making associate with the production efficiency of manufacturing firms.

Table 4.7: Correlations of Strategic information for decision making and Production Efficiency of manufacturing firms

Variables	1	2
1. Strategic information for decision making	1	
2. Production efficiency	-.202**	
	(0.001)	1

Source: Field data, 2016

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

Table 4.7 indicates that strategic information for decision making had a negative significant association with production efficiency (r = -.202, p =.001). This implies that

use of Strategic information for decision making by manufacturing firms leads to decline in production efficiency of these firms.

Results of the multiple regression analysis (Table 4.6) indicate that strategic information for decision making was a negative significant predictor of production efficiency (β = -.121 (p = .009). This value is statistically significant since the p-value is less than 0.01. It can be inferred from this value that a one unit change in strategic information for decision making leads to a decrease in production efficiency of 0.121, all things being fixed. This result corroborates the findings of Tsui (2001) who found that a negative relationship between management accounting system information and managerial performance of Chinese firms. However, the findings are at variance with those of Liaqat (2006) who found a positive and significant (p = 0.001) relationship between budgeting and managerial performance at 5% level of significance.

4.6: Relationship between Strategic Analysis and Production Efficiency of manufacturing firms

In order to assess the relationship between strategic analysis and production efficiency of manufacturing firms, Pearson's correlation and multiple regression analyses were performed. The results are presented in Table 4.8.

Table 4.8: Correlations of Strategic analysis with Production Efficiency of manufacturing firms

Variables	1	2
1. Strategic Analysis	1	
2. Production Efficiency	0.288**	
	(0.000)	1

Source: Field data, 2016

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

When the production efficiency scores were correlated with strategic analysis, the findings indicated that strategic analysis had a positive significant association with

production efficiency (r = 0.288, p =.000). This value is statistically significant since the p-value is less than 0.10. It can be inferred from this value that a one unit change in strategic analysis leads to an increase in production efficiency of 0.288, all things being fixed. This results are consistent with the findings of Liaqat (2006) and Isa and Thye (2006) who found a positive and significant (p = 0.001) relationship between strategic analysis and managerial performance at 5% level of significance. However, the findings are at variance with the findings of Tsui (2001) who found that a negative relationship between strategic analysis and managerial performance of Chinese firms.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of study findings, conclusions and recommendations based on the major findings.

5.1 Summary of the Findings

Based on descriptive statistics, objective one, strategic budgeting is the most prevalent strategic cost accounting practice among manufacturing firms in Nairobi City. Using multivariate regression analysis, objective two found out that strategic budgeting was a negative significant predictor of production efficiency while objective three found that strategic information for decision making was a negative significant predictor of production efficiency. Lastly, based on objective four, the findings was that strategic analysis had a positive significant association with production efficiency.

5.2 Conclusions of the Study

The study conclusions are outlined as per the objectives as follows:

From the findings of objective one, it can be concluded that strategic budgeting was rated as the most prevalent strategic cost accounting practice employed by manufacturing firms in Nairobi city. Based on objective two findings, it can be concluded that the strategic budgeting negatively influences production efficiency of manufacturing firms in Nairobi city. From the findings of objective three, it can be concluded that use the strategic information for decision making leads to decrease on production efficiency among manufacturing firms in Nairobi city. Lastly, from the findings of objective four, it can be concluded that strategic analysis leads to increase in production efficiency among manufacturing firms in Nairobi city.

5.3 Recommendations

Based on conclusion of objective one, manufacturing firms in Nairobi city, should intensify use of strategic cost accounting practices such strategic budgeting. From the conclusion of objective two, manufacturing firms in Nairobi city should reduce application of strategic budgeting as this was found to undermine production efficiency.

Similarly, from conclusion of objective three, manufacturing firms in Nairobi city should reduce use of strategic information for decision making as this was found to reduce production efficiency. Lastly, from the conclusion of objective four, manufacturing firms in Nairobi city should intensify adoption of strategic analysis as this was found to enhance production efficiency.

5.4 Limitations of the Study

The outcome of the study cannot be generalized to all manufacturing firms in Kenya since the study was limited to manufacturing firms in Nairobi city and did not incorporate all manufacturing firms in Kenya. The study adopted a correlational research design. The use of predetermined questions may have forced respondents to respond to questions even without properly understanding them. Some respondents did not provide answers to all questions asked and this could have influenced the final result.

5.5 Suggestions for Further Research

In order to improve this study, the researcher would like to suggest the following for further investigation. An exclusive study on the cost accounting constraints facing manufacturing firms in Nairobi city should be carried out. Future research should be conducted on determinants of strategic cost accounting practices in Kenya and compare their performance over a period of time using secondary data. Future studies could also explore the relative importance of strategic cost accounting practices. Further research could be conducted based on manufacturing zones in various towns in Kenya since such areas represent a variation in target markets and consequently the customers buying habits. Comparisons could be done on whether or not there is any variation or similarity. Lastly, future research efforts could dwell on large manufacturing firms and use more robust research designs such as time series, panel data and case studies.

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