BUSINESS PROCESS RE-ENGINEERING AS A TOOL FOR COMPETITIVE ADVANTAGE: A SURVEY OF CEMENT MANUFACTURING FIRMS IN KENYA

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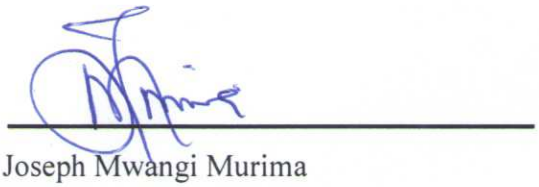
DECLARATION

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



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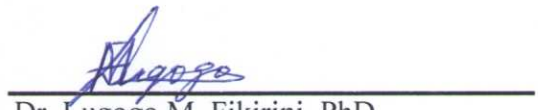

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To my loving parents; Mr. and Mrs. Murima, this is for you. To my loving partner Dinnah, your support, encouragement and friendship is cherished forever.

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ABSTRACT

The business environment in any industry has a lot of challenges resulting from competitive pressure which is growing at an ever faster pace due to growing customer expectation, globalization and technological development. Organizations are adopting Business Process Re-engineering (BPR) projects in an attempt to transform the organizational subsystems of management (style, values, and measures), people (jobs, skills, and culture), information technology, and organizational structures, including team and coordination mechanisms. Changes to these subsystems are viewed through the analytic lens of the business process (intra-functional, cross-functional, and inter-organizational). The goal of process transformation is improved process products and services measured in terms of cost, quality, customer satisfaction, or shareholder value. The study aimed to establish how various parameters of BPR that is process re-engineering, technology, employee competence, organisational structure, culture and strategy influenced competitive advantage in the six cement manufacturers in Kenya. Descriptive research was conducted using a survey design. A total of 40 top managers participated in the study selected from the six cement manufacturers in Kenya. Since the cement manufacturing companies in Kenya are only six, the study was therefore based on a census survey. Self-administered questionnaires were used in data collection. Descriptive analysis was done using percentages and frequencies. The findings were presented using both tabular and graphical presentation i.e. bar charts, pie charts and tables. The findings of this study showed that the major driving force behind BPR project was aimed at improving efficiency followed by customer service improvement, cost reduction, and lastly to increase profitability. The findings of this study showed that organizations should aim to initiate changes in the entire organization instead of undertaking small changes in departments and strategic business units which may lead to delays or impact negatively on customer service thus affecting performance. The key areas of performance improvements can include reduction in wastages, improvement in quality of products and

services, increased revenue and improved customers experience. It is imperative for companies to give up obsolete ways of doing business and adapt to dynamic environment. Process innovation is highly recommended as the sure step to sustainable competitive advantage. BPR should be accompanied by strategic planning, which should concentrate on exploiting technology as a competitive tool; ensure efficiency in distribution of roles, responsibilities and resources to support process activities and ensure that IT is an integral part of the reengineering initiative right from the beginning.

Key operational terms: Business process reengineering and competitive advantage.

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LIST OF ABBREVIATIONS AND ACRONYMS

ARML	Athi River Mining Limited
BCC	Bamburi Cement Company
BPR	Business Process Re-engineering
CA	Competitive Advantage
EAPC	East African Portland Cement Company Limited
EAC	East Africa Community
GCI	Global Competitiveness Index
ISO	International Organisation for Standardisation
KNBS	Kenya National Bureau of Statistics
KPLC	Kenya Power and Lighting Company (rebranded to Kenya Power)
KPMG	Klynveld Peat Marwick Goerdeler (accounting firm)
MIT	Massachusetts Institute of Technology
MCL	Mombasa Cement Limited
n.d.	no date (APA Referencing Manual, 6th Edition)
NCC	National Cement Company Limited
OP	Organisational Performance
SCC	Savannah Cement Company
SSA	Sub-Saharan Africa
WEF	World Economic Forum

OPERATIONAL DEFINITIONS OF KEY TERMS

In this study the following terms were used as operationalised in this section:

Business Process Re-engineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance in cost reduction, quality, service, speed, productivity and customer satisfaction.

Competitive advantage is a condition which enables a firm to operate in a more efficient or otherwise higher quality manner than its competitors, and which results in benefits accruing.

Organizational performance is the actual output or results of an organization as measured against its inputs.

Process is a set of logically related tasks performed to achieve a defined business outcome. Processes can be divided into those that are operationally oriented (those related to the product and customer) and management oriented (those that deal with obtaining and coordinating resources).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Today the business field locally and worldwide is full of firms that have undergone dramatic changes in recent times. These changes are to a large extent caused by economic recession and market forces of demand and supply. Competition, globalization and information technology are some of the others that have given rise to serious transformation in the world of business. In addition, customers' needs, choices, preferences and awareness have also changed rapidly. All of these changes have made it essential for business organizations and their managers to begin to rethink new, better and more effective ways of doing business more profitably at low cost (Aregbeyen, 2011).

Moreover, the business environment in any industry has a lot of challenges resulting from competitive pressure which is growing at an ever faster pace due to growing customer expectation, globalization and technological development. For organizations to remain in business competitively, there is need for them to consider performance improvements in their work processes (Momanyi, 2012).

Businesses are experiencing a modification from manufacturing-oriented beliefs to the customer oriented philosophy. Organizations use different strategies to increase the value of their products and to gain the competitive edge in the global market. The business approaches are used to satisfy customers, retain them and to attract new customers. Because of competition, the customers also gain the awareness that quality is the most important aspect in service as well as in manufacturing companies (Azhar et. al. 2013).

Aregbeyen (2011) observed that managers are concerned with discovering new processes and procedures of improving the quality of their products and services, formulating strategies and implementing business programmes that can help their organization respond adequately to market demand and dynamics. Different organizations have applied several forms of business strategies in order to compete profitably in the ever-changing and competitive business environment. Business environment can be described as the forces, factors and institutions with which the business has to deal with to achieve its objectives. Such forces include political, economic, socio-cultural, technological, environment and legal that is PESTEL framework. Chao (2010) argued that management of the business' external environment (macro environment) remains critical in ensuring business climate is conducive for a better economy. The PESTEL frame work enables business to undertake an analysis on how future trends in the political, economic, socio-cultural, technology, environmental and legal environments might affect the organizations. The competitive environment, also referred to as the market structure, is the dynamic system in which the businesses compete. The competitive environment restricts the flexibility of the business.

In recent years, Business Process Re-engineering (BPR) has become one of the most popular change management approaches which has attracted great attention from practitioners and academicians and has also become commonplace among companies (Goksoy et. al. 2012). The main reason is an organization creates value through its processes, as BPR is purported to produce positive results for firms including improvements in critical, contemporary measures of performance, such as cost, productivity, service, customer satisfaction, and speed (Vokurka and Fliedner, 1998).

BPR is a popular management approach, which enables organizations to conduct substantial business and technological improvements. Successful implementation of BPR can assist organizations to change their old-fashioned practices into innovative processes through

reorganizing and eliminating some processes or finding innovative ways to conduct business activities eventually boosting a firm to achieve competitive advantage

BPR begins with a high level assessment of the organization's mission, strategic goals and customer needs. Re-engineering of business processes leads to fundamental changes in many aspects of an organization, including organizational structure, job characteristics, performance measures and the reward system.

Kenya's manufacturing sector is dominated by food and consumer goods processing, and the country is expected to remain one of the top exporters of manufactured goods in Sub-Saharan Africa (SSA) over the medium to long term (KPMG Report on Manufacturing in Africa, 2014). In regard to this, there have been ongoing BPR initiatives in various manufacturing companies in the country.

Bitok (2013) reviewed BPR and Process time in selected manufacturing firms in Nairobi with a view to determine the extent of BPR adoption and benefits that arise from BPR implementation among manufacturing firms in Nairobi, Kenya. Similarly, studies have been carried out in heavy manufacturing sector in Kenya for instance Momanyi (2012) conducted a study in Kenya Petroleum Refineries Limited examining the role of BPR improvement on performance improvement. Gitagama (2008) reviewed the relationship between Business Process Re-engineering (BPR) and organisational performance: A case of East African Breweries Ltd. Ouko (2011) conducted an in depth investigation into the influence of Business Process Re-engineering on business performance in Kenya (a case of ISO 9000:2001 Certified Organizations). According to KPMG Report on Manufacturing in Africa (2014) Kenya is ranked 53rd in the innovation and sophistication factors pillar of the 2013-14 GCI of the WEF, compared to Tanzania's 109th, Uganda's 107th, and Rwanda's 66th. Within this pillar, it is notable that Kenya performs very well in terms of companies' capacity to innovate and spending on research and development. Based on these studies and the

varying gaps in literature, it is worth noting that no research related to BPR has been done on cement manufacturing industry in Kenya.

Further, the KPMG report stated that Kenya manufactures a range of goods, including the following: chemicals, textiles, ceramics, shoes, beer and soft drinks, cigarettes, soap, machinery, metal products, batteries, plastics, cement, aluminium, steel, glass, rubber, wood, cork, furniture, and leather goods. It's worthwhile to note that Kenya is witnessing increased infrastructure development, both by private and public organization. Consequently, it is against this backdrop that the researcher identified the need to explore how manufacturing companies are innovating to guarantee sustained competitive advantage with regard to business process re-engineering.

The implementation of BPR as a tool to enhance organizational performance and Competitive Advantage (CA) and the impact of the re-engineering of business processes on the performance of the Company and its role in creating a CA is key to this research.

Currently there are six cement manufacturers in Kenya, namely Bamburi Cement Company, Athi River Mining Company, East Africa Portland Cement, Savannah Cement, National Cement and Mombasa Cement. Two more firms that is Cemtech Sanghi, is in process of setting up plant while Dangote Cement is importing cement into Kenya market from its plant in Ethiopia as it completes local plant.

Bamburi Cement Company (BCC) was started in 1951 with its first plant located in Mombasa beginning production in 1954. Bamburi Cement Company is enjoying local dominance both in terms of production and market share. Through Fincem Holding Limited and Kencem Holding Limited, Lafarge Group (the world largest cement manufacturer) owns 58.6% of BCC. Key local institutions such as the National Social Security Fund (NSSF), Old Mutual Life Assurance Company and Kenya Reinsurance Corporation also hold sizable

shares in the BCC. Bamburi Cement Company produces cement and related products including precast concrete paving blocks and ready-mix concrete through its subsidiary Bamburi Special Products Limited. The company also has operations in Uganda through wholly-owned Hima Cement Limited, Uganda's second largest cement manufacturer (Dyer and Blair: Kenya Cement Industry Brief 2012).

Athi River Mining Limited (ARML) was established in 1974 and is currently the third leading cement manufacturer in Kenya (in terms of market share) and has subsidiaries in Kenya, Tanzania, South Africa and Rwanda. The company is 46% held by the family of the late founder, H. J. Paunrana. Amanat Investments Limited, the family's investments' holding company, owns 28% while Pradeep H. Paunrana, the Managing Director owns 18%. Athi River Mining Limited top ten shareholders largely comprise institutions which have a combined shareholding of 64%. Athi River Mining Limited also manufactures sodium silicate, lime, industrial minerals, fertilizer and special building products. In 2011, these non-cement products accounted for 32.4% of the company's total income (Dyer and Blair: Kenya Cement Industry Brief 2012).

East Africa Portland Cement Company Limited (EAPC) is the oldest cement manufacturer in Kenya having been incorporated in 1933. EAPC's shareholding structure is largely institutional, with the company's top ten shareholders owning a combined 96.1% stake in the company. NSSF and the Treasury are the company's top shareholders holding 27.0% and 25.3% respectively. EAPC produces custom-made cement products for the construction industry. The company does not have subsidiaries.

Mombasa Cement Limited (MCL) was founded in the year 2007 to cater for the building construction segment as one of the top quality cement manufacturer in the East African Community and beyond. The Company installed the mother plant at Vipingo, Kilifi County for clinkerization with a 1.0 million metric tonnes capacity per annum and the cement

grinding plant outside Nairobi at Athi River, Machakos County (Dyer and Blair: Kenya Cement Industry Brief 2012).

National Cement Company Limited, a member of the Devki Group of Companies was formed in 2008 to construct and operate a Portland Cement Plant in Athi River, about 50km from Nairobi City. Finally Savannah Cement is the newest entrant into the cement market in Kenya having completed the construction and commissioning of a state of the art, cement grinding plant with a capacity of 1.5 million tons a year in Athi River. Most of the cement manufacturers in Kenya operate grinding factories in Athi River due to close proximity to limestone mines, a raw material for cement manufacturing.

The cement industry in Kenya is witnessing intense competition as many firms enter the industry to get a stake of the market. The market extends beyond borders to East and Central African countries such as Uganda, Tanzania, Rwanda, Burundi, Democratic Republic of Congo and South Sudan. The industry has both local and international players. Kenya's growing cement consumption is fuelled by an upsurge in private sector funded housing developments, foreign funded commercial projects and mega infrastructure projects ranging from ports, rail and roads financed by government and donors.

The East Africa Community (EAC) member states in July 2008 abolished duty on cement imports in their respective national budgets in a bid to meet the region's growing demand for the building material. However a report by the East African Cement Producers Association (EACPA, 2009) noted that cement players in Kenya, Uganda, Tanzania, Burundi and Rwanda urged the governments to reconsider the move to protect them from cheap imports from foreign investors.

Previous studies such as Molonket et.al. (2014) argued that the success of a company's competitive strategy depends on how it relates to its environment. Besides, the relevant environment being very broad, comprising social and economic forces, the key aspect of the

company's environment remains to be the industry in which it operates. Consequently, industry structure has a strong influence in defining the rules of the competitive game as well as the strategies potentially available to the company. Rono (2013) conducted a study focusing on Lean Manufacturing Practices in a Continuous Process Industry: A Case Study of Bamburi Cement Company. The study revealed that there were good systems and structures to support Lean Manufacturing which if implemented will greatly improve the performance of the organization. Kinyua (2007) conducted a study on strategic responses by the cement manufacturing companies in Kenya with a view to establishing initiatives companies are adopting to remain competitive. The study examined behavior of cement manufacturing firms in a challenging environment and identified the constraints faced by the firms in responding to the challenges. It is at the center of such mixed conclusions that necessitated the need to carry out a study from a Kenyan context to establish the effect of business process re-engineering on competitive advantage .With this knowledge in mind, this research aimed to identify the role of BPR as a tool for competitive advantage in six cement manufacturers in Kenya and measures that required to be considered within the cement industry in order to realize greater organisational performance and sustainability of this sector in the country.

The business dictionary defines industry as manufacturing or technically productive enterprises in a particular field, country, region, or economy viewed collectively, or one of these individually. A single industry is often named after its principal product; for example, the auto industry. Obiero (2008) argued that cement industry is oligopostic in nature whereby few players generally characterize the industry. Partly this could be attributed to the high switching costs involved in setting up a cement plant while on the other hand cement plants require a huge capital amount to establish and operating it. The demand for cement and cement by-products is growing daily as the Kenyan economy and neighbouring state economies expands (Obiero, 2008).

The Industry and Retail Chapter of the Report: Kenya (2016) indicated that the last few years have witnessed enormous growth in the Kenya cement production and consumption (Oxford Business Group). On the other hand, the 2015 Economic Survey Report by the Kenya National Bureau of Statistics indicated that the total cement production rose by 16.3% in 2014 to reach 5.88m tonnes, compared to a 7.8% increase recorded in 2013 (KNBS, 2015). Although consumption stood at 5.2m tonnes in 2014, it has been increasing faster than production, with the KNBS reporting a 21.8% rise in consumption in 2014, driven by robust growth in the construction industry. In February 2015 Standard Investment Bank forecast that Kenya will remain the dominant country for cement activity in the EAC through to 2017, accounting for 42% of total consumption and 51% of total production (Industry and Retail Chapter of the Report: Kenya, 2016).

The cement industry in Kenya is experiencing strong growth prospects however, the industry faces a number of challenges moving forward, including the depreciation of the shilling against major currencies, depressed global commodities prices and falling international demand. In addition, the entrance of Dangote (Daily Nation, August 30 2016) and Cemtech into the market will increase competition in the segment, with supply still expected to remain greater than demand in the near future (Industry and Retail Chapter of the Report: Kenya, 2016).

The Oxford Business Group report (2015) indicated that growth in the Kenyan construction sector which is driven by major infrastructure projects such as the Standard Gauge Railway as well as a push to expand housing supply reached 13.1% year-on-year (y-o-y) in 2014, more than double the 2013 figures. Kenya National Bureau of Statistics report revealed that construction accounted for 4.8% of GDP in 2014 which is a substantial growth (KNBS, Economic Survey 2015). In addition, the rising activity has led to demand for cement in Kenya increasing at a rate of 21.8% in 2014 to a total 5.2m tones an amount almost half the total output for Kenya, Uganda and Tanzania combined.

The Oxford Business Group report (2015) indicated that the rise in domestic demand has not necessarily translated to good returns for Kenya's producers with some cement firms average net profit margins declining. To a certain extent, this was due to cheaper imports from China, India and Pakistan, where production costs are significantly lower. Electricity costs, which make up some 40% of the total cost in cement production, remain quite a bit higher in Kenya than those in some Asian countries, putting pressure on local producers.

KNBS data indicated that cement production went up by 8.0 per cent from 5,882.5 thousand tonnes in 2014 to 6,352.9 thousand tonnes in 2015, as shown in Table 1 below. Cement consumption and stocks rose to 5,708.8 thousand tonnes in 2015 from 5,196.7 thousand tonnes in 2014 as a result of increased demand in the construction sector. However, total exports of cement declined by 5.7 per cent to 681.7 thousand tonnes in 2015. Exports of cement to Uganda and Tanzania decreased to 487.4 thousand tonnes in 2015 from 547.7 thousand tonnes in 2014. On the other hand, imports of cement rose marginally to 37.6 thousand tonnes in 2015 (KNBS, Economic Survey 2016).

Year	Production	Imports	Consumption and stocks	Exports to	
				Uganda and Tanzania	All other countries
2011	4,478.4	53.0	3,870.9	583.1	125.3
2012	4,693.7	35.3	3,991.2	561.7	176.7
2013	5,059.1	34.4	4,266.5	594.0	233.9
2014	5,882.5	36.4	5,196.7	547.7	175.2
2015	6,352.9	37.6	5,708.8	487.4	194.2

Table 1.1: Cement Production and Utilisation, 2011-2015 ('000 Tonnes)

Source: KNBS (2016)

1.2 Statement of the Problem

Hammer (1990) argued that the usual methods for boosting performance, competitive advantage and process rationalization and automation haven't yielded the dramatic improvements companies need. In particular, heavy investments in information technology have delivered disappointing results, largely because companies tend to use technology to

mechanize old ways of doing business. They leave the existing processes intact and use computers simply to speed them up.

According to Kettinger et. al. (1997) organisations are adopting BPR projects in an attempt to transform the organizational subsystems of management (style, values, measures), people (jobs, skills, culture), information technology, and organizational structures, including team and coordination mechanisms. Changes to these subsystems are viewed through the analytic lens of the business process (intra-functional, cross-functional, inter-organizational). The goal of process transformation is improved process products and services measured in terms of cost, quality, customer satisfaction, or shareholder value.

Research on BPR has been conducted in Kenya with focus on different aspects of BPR: Thiga (1999) studied BPR at Kenya Power and Lighting Company (KPLC), while Mairura (2003) conducted a study at Teachers Service Commission. Kahigu (2003) explored the enabling role of ICT in BPR at the Kenya Commercial Bank and recommended future studies to include additional factors which affect BPR in financial and non financial institutions. Atebe (2001) studied the effects of BPR on the business process cycles at the KPLC; Kavate (2005) conducted a study on the implementation of BPR by Gemstone dealers in Nairobi. The above past studies, amongst others, focused to a large extent on issues related to implementation of BPR. Visibly, little or no attention was given on the role of BPR in enhancement of competitive advantage particularly in Kenyan market. According to Muiru (2016) stiff competition necessitates firms to come up with strategies that improve competitiveness. This is prevalent in developing countries like Kenya where competitiveness helps firms overcome the restrictions of their limited domestic markets in order to operate optimally. Little research has been conducted on competitiveness at the firm level in developing countries like Kenya and Africa in general.

From the above discussion, it emerged that few studies on BPR and competitive advantage have been conducted particularly in heavy manufacturing sectors in Kenya. For instance little knowledge was available on effect BPR has on the organisational performance and sustenance of competitive advantage especially in cement manufacturing. The market environment remained more dynamic now compared to a few years ago. It was thus prudent to seek answers to such questions as to what role BPR has to play in these industries in creating competitive advantage. In order to close this gap, the study sought to investigate on the role of BPR as a strategic tool for competitive advantage in six cement manufacturers in Kenya.

1.3 Objectives of the Study

1.3.1 Main Objective

The main objective of the study was to investigate the effectiveness of Business Process Re-engineering (BPR) as a tool for competitive advantage in cement manufacturing companies in Kenya.

1.3.2 Specific Objectives

The specific objectives for this research project were:-

1. To determine the effect of process re-engineering on competitive advantage of cement manufacturing firms in Kenya
2. To examine the effect of technology on competitive advantage of cement manufacturing firms in Kenya
3. To investigate the effect of employee competencies on competitive advantage of cement manufacturing firms in Kenya
4. To investigate the effect of organizational strategy on competitive advantage of cement manufacturing firms in Kenya
5. To establish the effect of organizational structure on competitive advantage of cement manufacturing firms in Kenya

6. To establish the effect of organizational culture on competitive advantage of cement manufacturing firms in Kenya

1.4 Research Questions

The study proposed the following questions based on the objectives of the study:-

1. What is the effect of processes re-engineering on competitive advantage of cement manufacturing firms in Kenya?
2. What is the effect of technology on competitive advantage of cement manufacturing firms in Kenya?
3. What is the effect of employee competencies on competitive advantage of cement manufacturing firms in Kenya?
4. To what extent does organizational strategy influence competitive advantage of cement manufacturing firms in Kenya?
5. To what extent does organizational structure influence competitive advantage of cement manufacturing firms in Kenya?
6. To what extent does organizational culture influence competitive advantage of cement manufacturing firms in Kenya?

1.5 Assumptions

The study was based on the underlying assumptions that: the managers have prior understanding of BPR or have practiced it, accurate information on the research questions would be availed. Finally, the respondents selected were representative of the population the researcher intended to make inferences to.

1.6 Scope of the Study

The study location was confined to six cement manufacturers in Kenya. The geographical location of the six cement manufacturers were as shown below:-

Company	Plant location/mine
Bamburi Cement Limited (BCC)	Athi River and Mombasa
Athi River Mining Limited (ARML)	Athi River and Kaloleni
East African Portland Cement Company Limited (EAPC)	Athi River
National Cement Company Limited (NCC)	Lukenya
Mombasa Cement Limited (MCL)	Athi River and Vipingo
Savannah Cement Company (SCC)	Athi River

The population of the study was six cement manufacturing firms in Kenya.

1.7 Limitation of the Study

The study was carried out under the following limitations. First, the research focused only on two aspects; Business Process Re-engineering and competitive advantage. Secondly, the research was carried within the time frame of the study programme.

1.8 Significance of the Study

The findings of this study will be significant to cement manufacturers in Kenya by offering great value through provision of critical information on the companies' key business process factors which can be re-evaluated to increase organizational performance. In addition, the information will provide deep insight essential in developing practical business and operational strategy following evaluation of their work flows and functions in different areas of the production. The study will further inform management towards effective and efficient allocation and utilization of resources for both present and future process improvements.

Business consultants will find this study significant because the world is going towards the global competition; and thus people seek to know the effect of re-engineering on different variables like cost, service, quality and productivity. This study will offer basis for in depth insight and further interrogation on the applicability of BPR as a business tool for assisting managers in their analysis for effective decision making. Other players in cement industry in Kenya will also find this study very useful with regard to creating an understanding of the role of BPR. The findings of this study will provide insight to policy makers into the practices of BPR in the cement manufacturing in Kenya. This understanding will help during

formulation of polices regarding regulation of importation of cement. This can be done by reviewing the taxation policy to protect the local manufacturing companies from cheap imports from countries like China and India.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review of the theoretical concepts and empirical review involved in the study. It begins by evaluation of theoretical review of Business Process Re-engineering and Competitive Advantage. An analysis of theories from different authors is provided to show their relationship with study variables. This is followed by empirical review and a presentation of the relationship of dependent and independent variables in the conceptual framework respectively. A critique of existing literature, research gap, summary of the chapter and conceptual framework are presented in that order respectively.

2.2 Theoretical Review and Concepts

Different organizations have applied several forms of business strategies in order to compete profitably in the ever-changing and competitive business environment. Business environment can be described as the forces, factors and institutions with which the business has to deal with to achieve its objectives. Such forces include political, economic, socio-cultural, technological, environment and legal that is PESTEL framework. Chao (2010) argued that management of the business external environment (macro environment) remains critical in ensuring business climate is conducive for a better economy. The PESTEL frame work enables businesses to undertake an analysis on how future trends in the political, economic, socio-cultural, technology, environmental and legal environments might affect the organizations. Political factors that affect business include tax policy, infrastructure, services and regulations. In terms of economic factors, growth rate, inflation, labour costs and business cycles will impinge on business. Key socio-cultural factors that affect business are demographic patterns, levels of education, cultural norms and beliefs and income distribution. With regard to technological factors, technologies transfer, emerging technology, business that are proactive creates market niche and superior products. Research

and development initiatives and communication have far reaching effect on businesses. There are several environmental factors that businesses face key among them pollution, waste recycling, resource management, clean energy, workforce health and safety and climate change. Legal factors that affects business environment include regional laws, employment laws and judicial systems and rule of law.

The competitive environment, also referred to as the market structure, is the dynamic system in which the businesses compete. The competitive environment restricts the flexibility of the business. For instance, changes in global economic factors may increase the prices of raw materials, forcing companies that supply the industry to charge more, raising overhead costs. Contrary to this, local aspects, like regional labour shortages and government policies will affect the competitive environment. Some of business strategies adopted in a competitive environment include acquisition, mergers, diversification, turn around, total quality management, corporate downsizing, re-engineering among others.

A new concept of BPR emerged during the early 1990s as an approach mainly developed by practitioners. It gained prominence in the work of writers such as Davenport and Short (1990), Hammer (1990), Hammer and Champy (1993) and the concept is currently a word buzz in most organizational, management and information technology literature.

Hammer and Champy (2001) defined BPR as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed. As Stoddard and Jarvenpaa (1995) noted, organizations embrace a BPR approach when they believe that a radical improvement can be achieved by marrying business processes, organization structure, and IT change. Davenport (1990) developed four major principles of BPR as below:-

1. A science should be developed for each work activity, identifying the ‘best way’ to perform it.

2. People performing an activity should be scientifically selected to have the proper capabilities, and then trained in the science and their skills developed.
3. Management's relationship with workers should be one of cooperation in performing the work according to the science.
4. There is an almost equal division of the work and the responsibility between the management and the workmen.

From the discussion above, it follows then that re-engineering is radical change whereas process innovation involves stepping back from a process to inquire as to its overall business objective, and then effecting creative and radical change to realize high degree of improvements in the way that objective is accomplished.

In recent years, Business Process Re-engineering (BPR) has become one of the most popular change management approaches which has attracted great attention from practitioners and academicians and has also become commonplace among companies (Goksoy et. al. 2012). The main reason is that an organization creates value through its processes, as BPR is purported to produce positive results for firms including improvements in critical, contemporary measures of performance, such as cost, productivity, service, customer satisfaction, and speed (Vokurka and Fliedner, 1998). Tony (2014) observed that the idea of process re-engineering dates back to early 19th Century during development of scientific management theory whose approach to management is found in almost every industrial business operation across the world. Its influence is also felt in general business practices such planning, process design, quality control, cost accounting, and ergonomics.

Business Process Re-engineering is a popular management approach, which enables organizations to conduct substantial business and technological improvements. Successful implementation of BPR can assist organizations to change their old-fashioned practices into innovative processes through reorganizing and eliminating some processes or finding

innovative ways to conduct business activities eventually boosting a firm to achieve competitive advantage

BPR begins with a high level assessment of the organization's mission, strategic goals and customer needs. Re-engineering of business processes leads to fundamental changes in many aspects of an organization, including organizational structure, job characteristics, performance measures and the reward system.

2.2.1 Scientific Management Theory

It is a theory of management that analyzes and synthesizes workflows. Its main objective is improving economic efficiency, especially labor productivity. It was one of the earliest attempts to apply science to the engineering of processes and to management.

The theory focuses on motion and time study associated with the so-called scientific management movement of the late nineteenth and early twentieth centuries in the United States, primarily with the work of industrial engineers Frederick Winslow Taylor (1856–1915), Frank B. Gilbreth (1868– 1924), and Lillian Gilbreth (1878–1972).

Taylor (1947) suggested a system of task management in which responsibilities are clearly divided between managers and workers. Managers and engineers engage in planning and task optimization, primarily through motion and time study, while workers are responsible for carrying out discrete tasks as directed. The Gilbreths sought to find the best method to perform an operation and reduce fatigue by studying body motions, attempting to eliminate unnecessary ones and simplify necessary ones to discover the optimal sequence of motions.

Adler (1995) noted that Taylorism played a key role in the continuous productivity improvement generated by the Ford model of work organization. The Ford model, which is based on the supply-driven, mass production of standardized goods using semiskilled workers, achieved efficiency improvements via scale economies and detailed division of

labor, both accomplished through the Taylorist separation of conception from execution, in which managers plan tasks that workers execute.

Frank and Lillian Gilbreth, (n.d.) held that there was a one best way to do any task. Efficiency could therefore be improved by finding this “one best way” and replicating it throughout the manufacturing process. The Gilbreths used new technologies such as film to break motions down into incremental parts, which they called therbligs. By reducing the number of therbligs for any task, one could increase the efficiency of the worker. In a nutshell, Scientific Management involves breaking the manufacturing process down to a cycle of simple sequences, which were to be carried out in the least amount of time possible with the minimum amount of effort.

As observed by Setegn et.al. (2013), during the industrial age of mass production, organizations and companies were built around Adam Smith's brilliant discovery of breaking work down into its simplest components and assigning it to specialists (the notion of division of labor and specialization). The new world requires organizations to build working system that can make them responsive, flexible and customer focus. The fragmentation and traditional bureaucratic organization of mass production era do not fit to these requirements. These new feature of organization (responsiveness, flexibility and customer focus) achieved in new perspective shift the approach of work from task based to process based thinking (Setegn et.al. 2013).

In conclusion, it is worth noting that the researcher underscores the importance of the Scientific theory which is the main theory of this study. Further, the theory lays the foundation on understanding analysis and synthesizes of workflows for purposes of process re-engineering.

2.2.2 Michael Porter’s Five Forces Model

According to Porter (1985), Five Forces model proposed that industry structure and positioning within the industry are the basis for models of competitive strategy. The “Five Forces” model captures the main idea of Porter’s theory of competitive advantage. The Five Forces define the rules of competition in any industry. Competitive strategy must grow out of a sophisticated understanding of the rules of competition that determine an industry's attractiveness. Porter claims that the ultimate aim of competitive strategy is to cope with and, ideally, to change those rules in the firm's behavior (Porter, 1985). These Five forces determine industry profitability, and some industries may be more attractive than others. The crucial question in determining profitability is how much value firms can create for their buyers, and how much of this value will be captured or competed away. Industry structure determines who will capture the value. But a firm is not a complete prisoner of industry structure - firms can influence the five forces through their own strategies. The five-force framework highlights what is important, and directs manager towards those aspects most important to long-term advantage (Porter, 1985). The Porter’s Five Forces Model is shown in Figure 2.1.

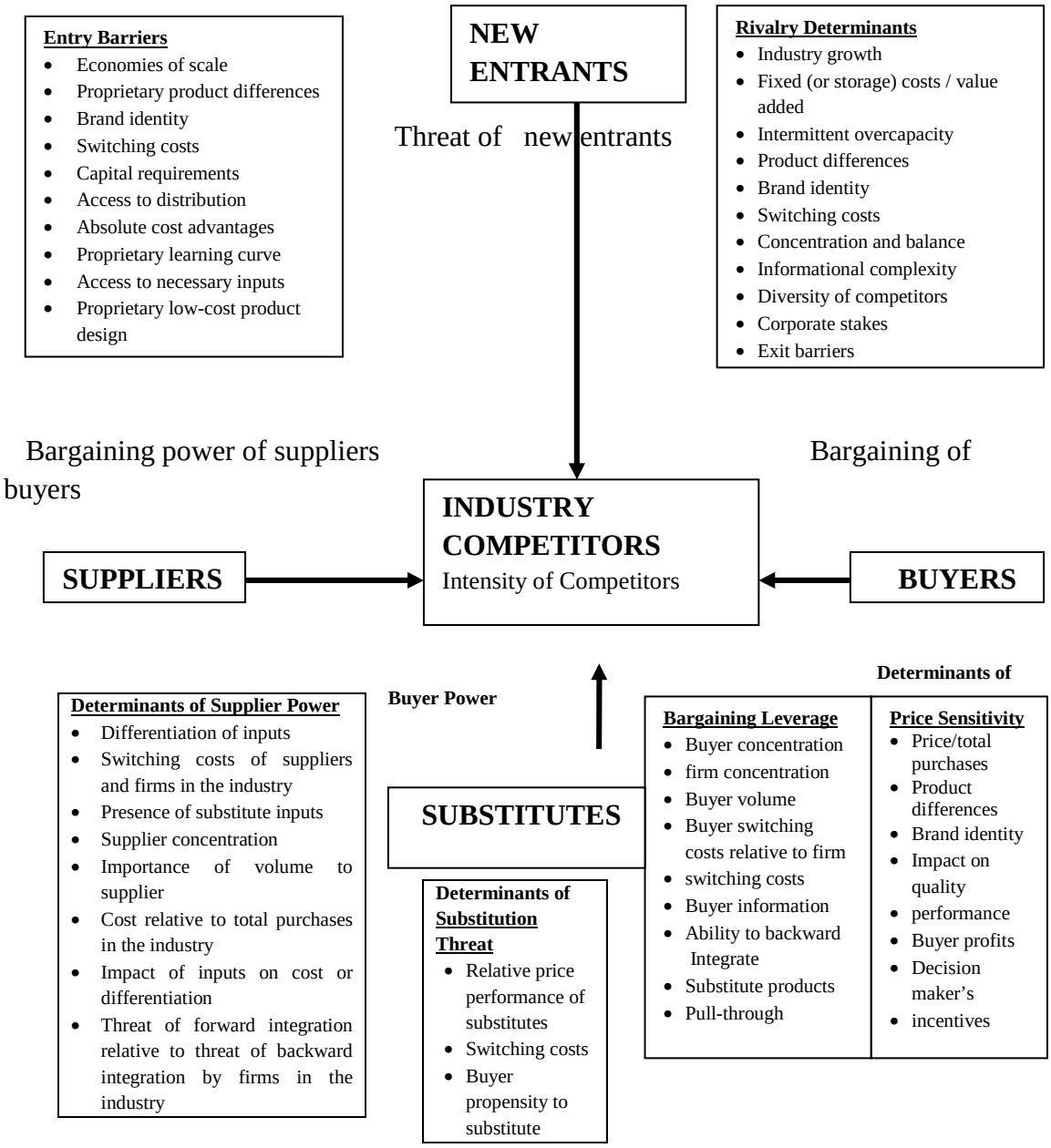

Figure 2.1: Porter's Five Forces Model, Source: Porter, (1985).

2.2.3 Porter's Theory of Competitive Advantage

The theory of competitive advantage was proposed by Michael Porter in 1985. According to Porter (1985) the states and businesses should pursue policies that create high-quality goods to sell at high prices in the market. Porter emphasized productivity growth as the focus of national strategies. The theory is based on premise that cheap labor is everywhere, and natural resources are not necessary for a good economy. The other theory, comparative advantage, can lead countries to specialize in exporting primary goods and raw materials that trap countries in low-wage economies due to terms of trade. The competitive advantage

theory emphasize on maximizing scale economies in goods and services that garner premium prices.

Competitive advantage arises when an organization acquires or develops an attribute or combination of attributes that enables it to outdo its competitors. These attributes can include access to natural resources, such as high grade ores or inexpensive power or access to highly trained and skilled personnel human resources. New technologies, such as robotics and information technology, are either to be included as a part of the product or to assist making it.

The theory of the competitive advantage of nations provides a sophisticated tool for analyzing competitiveness with all its implications through an understanding of the competitive advantage of nations in international trade and production. At its core, the emphasis is on individual industries, or clusters of industries, in which the principles of competitive advantage are applied. The theory begins from individual industries and builds up to the economy as a whole. Porter (1985) argued that firms, not nations, compete in international markets, understanding the way firms create and sustain competitive advantage is the key to explaining what role the nation plays in the process. In order to draw conclusions on the competitiveness of the particular industry, consideration of the different facets of the competitive diamond of the whole nation is needed. Michael Porter considers the competitiveness of a country as a function of four major determinants: factor conditions, demand conditions, related and supporting industries and firm strategy, structure, and rivalry.

Despite the fact that these determinants control the existence of competitive advantage of an entire nation, their nature insinuate that they are more specific to a particular industry rather than typical of a country. This is because in Porter’s theory the basic unit of analysis for understanding competition is the industry.

The main objective of the study is to investigate the effectiveness of BPR as a tool for competitive advantage. As such the study adopted the theory of competitive advantage in order to explain the dependent variable of the study. The theory features content that supports the variable under the study.

2.3 Empirical Review

Business Process Re-engineering influences the competitive advantage of an organisation. As a strategic tool it influences competitive advantage through different factors that is process re-engineering, technology, employee skills, organisational strategy, organisational structure and organisational culture.

2.3.1 Role of Process Re-engineering as a driver of Competitive Advantage

According to Illiaifar et.al. (1995) a business process is a collection of activities designed to produce a specific output for a particular customer or market. It implies a strong emphasis on how the work is done within an organisation, in contrast to a product's focus. Hammer and Champy (1993) described process functions as a collection of activities that take one or more kinds of input and creates an output that is of value to the customer. Typical process includes ordering of organizational structure, manufacturing, production, development, delivery and invoicing. A process is thus a specific ordering of work activities across time and place, with a beginning, an end, and clearly defined inputs and outputs: a structure for action. Al-Mashari et. al, (2001) argued that an increase in consumer requirements for both product and service efficiency and effectiveness has resulted in BPR.

Companies re-engineer for a variety of compelling business reasons. First, management determines that a significant gap exists between actual and desired results, creating a business problem. At times, senior management translates this business problem into process performance problems and opportunities. This allows the company to focus on fundamentally

transforming the target processes, thus improving business results and solving the problem (Shin and Jemella 2002).

It is worth noting that business processes affects structures and jobs. The way in which work is performed determines the way people's jobs are organised. For example, the integrated processes give rise to multidimensional jobs and the best way of supporting such jobs is to organise the employees into teams. Consequently, different structures and jobs require people who have the abilities to adapt themselves into the new working conditions. This interaction changes the way in which employees are recruited, evaluated and paid.

Process re-engineering and competitive advantage has a direct relationship. This proposition accurate as Khade and Metlen (2003) argued that whenever a process/product is first changed time lapses before people involved discover and learn all the steps necessary to make the process/product as efficient and effective as possible and thereby achieving a competitive edge. Process improvement has potential to decrease raw material usage or lower labor input process development to enhance economies of scale. Enhanced process changes improve product quality, ease scheduling, and ensure faster response time to orders s well as other aspects that raise buyer value (Porter, 1985).

2.3.2 Functions of Technology in achieving competitive advantage

According to Akhavan et. al. (2006), deployment of technological assets and resources by organizations in order to achieve differentiation makes the difference in whether an organization remains competitive or obsolete, organizations need to be technologically enabled in order to survive or prosper. Equally important, organizations must also seek ways and means of becoming more efficient and productive. Davenport (1993) deduced that the areas of improvement are derived from improving on time performance, reducing defect rates, increasing accuracy of quotes, eliminating repetitive tasks, reducing turnaround time, speeding up product development and improving human resource practices. Information

technology capabilities involve improving information access and coordination across organizational units. Technology is considered very powerful that it can actually create new process design options, rather than simply support it.

Technological innovation impacts competitive advantage directly and as Porter (1985) noted, there is product development to reduce product cost by lowering material content, facilitate ease of manufacture, simplify logistical requirements. In addition, technology enables product development to enhance product quality, features, deliverability, switching costs and new designs to meet market segment or face competitors.

2.3.3 Influence of Employees competencies to enhance Competitive Advantage

Hammer and Champy (1993) recognized the importance of the human resource when they stated that companies are not asset portfolios, but people working together to invent, sell and provide service. In this regard, human factor is critical in the daily operations, performance and consequently in the success of organizations. No re-engineering effort will succeed without first re-educating and retraining people who will ultimately work the new process. It suffices to say that the success of BPR is closely linked to the success of human resources and human resource policies which act as an enabler for Business Process Re-engineering. The human resource enablers focus on new process skills, job motivation and human resource policies. BPR implementation significantly impact on the quality and quantity of staff employed by the organization; how the members of staff are recruited, selected, trained, manage their careers and promoted. Management roles are also transformed and middle level managers are usually reduced.

The quality of employees and their skills acquired through education and training are key components in determining the long-term profitability of organizations (ATD, 2016). Equally important is supportive HR strategy (Marthur, 2016) which helps the employee to implement business strategy. This create motivated, committed, and satisfied workforce.

2.3.4 The significance of Organisational Strategy in sustaining Competitive Advantage

Mahto et. al. (2010) defined strategy as large scale, future oriented plans for interacting with the competitive environment to achieve company objectives. It's a company's game plan. An organizational strategy is a broad based formula on how a business is going to accomplish its mission, what its goals should be, what plans and policies it will need to accomplish these goals. Jelassi and Enders (2005) argued that an organization's strategy addresses fundamental questions about the current position of a company and its future directions. Kaplan and Norton (2005) postulated that organizations undertake Business Process Re-engineering because of the need to redefine their strategic focus. According to Johnson and Scoles (2006) BPR decisions, like strategy decisions are complex and involves a high degree of uncertainty since they involve major change. The style which depicts the philosophy, values and shared beliefs adopted by managers in the use of their powers are also affected.

According to Jelassi and Enders (2005), there are four fundamental reasons why an organization may find it necessary to have a strategy; one is to define the long-term direction of the organization, second is the development of an overall plan for deploying organization resources, third is determination of the necessary tradeoffs, to define its unique positioning vis- a -vis competitors and fourth is to achieve sustainable competitive advantage over rivals in order to ensure lasting profitability.

A firm's choice of organisation strategy is partly a legacy of its past (Porter, 1987). In case business units are in unattractive industries or performing poorly, the company must start from scratch. An organisational strategy should not be a once-and-for-all choice but a vision that can evolve. A firm's strategy allows it to develop unrivaled competencies such as marketing, design and manufacturing. These competencies can allow a firm to create a competitive advantage. For example, a firm with the competence of marketing can use it to gain the competitive advantage of a superior reputation. Initially the firm chooses what kind

of competitive advantage it wants to pursue and then develop the competencies needed (Porter, 1985). For instance, in order for a firm to create a competitive advantage in cost leadership, investment should be made in development of its competencies in efficient production, supply-chain management and lean manufacturing.

2.3.5 Impact of Organisational Structure in creating Competitive Advantage

BPR requires a flexible organization design. Rigid infrastructure of the organization must be altered to facilitate cooperation between various departments by using cross-functional teams instead of individuals working in isolated departments. Flexible infrastructures adapt to changing external drivers. Therefore, the flexible infrastructure includes processes for continuously evaluating existing tools to see what should be removed, and continuously seeking user input about what works or does not. Hammer and Champy (1993) recommended a move to much flatter structures organized around the newly created process lines as a result of restructuring of the organization.

Organization with poorly designed structures experiences an inappropriate, slow and inefficient communication among the departments leading to defects and poor outputs (Mathur and Nair, 2016). On the other hand, organizations with well designed structures have ability to produce quick and effective decisions due to efficient communication systems resulting to enhanced outputs and excellent performance.

2.3.6 Role of Organisational Culture in establishing Competitive Advantage

Goksoy et. al. (2012) argued that greater empowerment and participation in decision making are some of the trends in organizational culture. These recent shifts have resulted in flatter organizational hierarchies or broader spans of control in organizations and have been widely documented to lead to both higher productivity and greater employee satisfaction. On the same note, Love and Gunasekaran (1997) concurred with the above argument that employees

involved in the process become decision makers through greater empowerment and consequently taking responsibility for the functional and operational procedure of the process

Organisational culture requires a clearly understood common language to embrace and tell the story that includes mission, vision, values, and clear expectations (www.torbenrick.eu). When culture embraces strategy, execution is scalable, repeatable and sustainable. A positive and strong culture makes an employee perform and achieve good outputs while a negative and weak culture demotivates an outstanding employee to underperform and end up poor outputs (Mujeeb, et.al 2011).

2.3.7 Competitive Advantage

Porter, (1998) argued that when a firm sustains profits that exceed the average for its industry, the firm is said to possess a competitive advantage over its rivals. Moreover, Porter, (1985) observed that a competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing products (differentiation advantage). Thus, a competitive advantage enables the firm to create superior value for its customers and superior profits for itself.

Cost and differentiation advantages are known as positional advantages since they describe the firm's position in the industry as a leader in either cost or differentiation. A resource-based view emphasizes that a firm utilizes its resources and capabilities to create a competitive advantage that ultimately results in superior value creation (ibid).

According to Porter, (1998) competitive advantage is referred to as a condition which enables a country or firm to operate in a more efficient or otherwise higher quality manner than its competitors, and which results in benefits accruing. Competitive advantages usually originate in a core competency. A company’s core competency is the one thing that a company can do

better than its competitors. A competitive advantage can entail a variety of company characteristics; for example, customer focus, brand equity, product quality, research and development focus. To be effective a competitive advantage must be difficult to mimic, applicable to multiple situations, unique, sustainable and superior to the competition.

The 1990 and 1991 'Managing the Flat Organization' surveys revealed that managers face a turbulent and demanding business environment (Coulson-Thomas, 1997). In order to survive in an environment of multiple challenges and opportunities, companies have to (a) differentiate themselves from competitors and (b) become more flexible, responsive and adaptable (ibid).

Porter (1980) argues that there are two basic types of competitive advantage: lower costs and differentiation. Lower cost emphasises the ability of the firm to design, produce and sell a standardised product or service more efficiently than its competitors without neglecting the quality. Differentiation is the ability to provide unique and superior value to the customer in terms of the service itself, the delivery system, product designs, employee and technical expertise. Another important variable is the competitive scope or the breadth of the firm's target within the industry. Competitive scope is important because industries are segmented and serving different segments requires different capabilities and strategies.

A company's competitive position and its chosen products/services and markets are important, but only at any given point in time. In a rapidly changing competitive environment, products and services easily become obsolete and static competitive positions are rapidly overtaken. As a result, companies have to be able to respond consistently to changing markets with improved or new products/services and ever improving competitiveness (Peppard and Rowland, 1995).

Peppard and Rowland, (1995) also suggested that business process re-engineering involves the development of an organisational architecture which includes identification of core processes and their objectives. Craig and Yetton, (1994) noted that business process re-engineering draws together two critical concepts i.e. a few key processes determine the competitive success of a company and on other hand the entire set of activities involved in delivering a business process should be managed as one unit or flow of work and that the customer's expectations and needs should determine the objectives of that process.

2.4 Role of Business Process Re-engineering in Sustaining of Competitive Advantage

Hammer and Champy, (1993) posited that there are three kinds of companies that undertake re-engineering process. First, there are the companies that are in deep trouble and require quantum leap improvement to survive. While the second group consists of those who are not yet in troubled waters but whose management has the required foresight to see trouble coming. These companies have the vision to begin re-engineering in advance to avoid running into deep trouble and adversity. The third group is those companies that are in peak condition. They have no identifiable problems either now or in the foreseeable future but their management are ambitious and are aggressive enough to embark on re-engineering.

Several factors encourage a more fundamental, integrated and better managed approach to planning and designing business activities and explain the current interest in BPR. As Talwar (1997) notes: First the globalisation of business, deregulation and liberalisation of markets increases the competition. Second the economic pressures influenced by the global recession is increasing unemployment and leading to greater price competition. Thirdly, the operational challenges of shareholders are looking to management to sustain profitability and competitiveness while the need for customer service, quality, speed and flexibility is increasing. Fourth the competitive learning through recognition that training, learning and re-skilling are powerful tools and critical success factors. Fifth the continuous change recognizing that change is an ongoing process and the successful management of change

leads to competitiveness. Improving the past management failures through recognition that past management failures have left the organisations with inefficiencies and weaknesses.

2.4.1 Business Process Re-engineering

BPR is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed (Hammer & Champy, 2001). At the heart of re-engineering is the notion of discontinuous thinking of recognizing and breaking away from the outdated rules and fundamental assumptions that underlie operations.

For the most part, work has been organized as a sequence of separate tasks and employed complex mechanisms to track its progress. This arrangement can be traced to the Industrial Revolution, when specialization of labor and economies of scale promised to overcome the inefficiencies of cottage industries. Stoddard & Jarvenpaa (1995) added credence by arguing that businesses disaggregated work into narrowly defined tasks, reaggregated the people performing those tasks into departments, and installed managers to administer them.

Managers have tried to adapt their processes to new circumstances, but usually in ways that just create more problems. For instance, if customer service is poor, they create a mechanism to deliver service but overlay it on the existing organization. Bureaucracy thickens, costs rise, and enterprising competitors gain market share. Kettinger et. al. (1997) pointed out that BPR takes place in the context of people and the organization. Further, the risk of failure would be great if it proceeds without appropriate plans for organizational changes.

According to Maria (1999), the most fundamentally understood orientation of the BPR literature is that high performance has to be based on the fit between an organisation's strategy, structure, technology, culture, management processes, and individual skills and roles, as illustrated by the MIT 90s model shown in Figure 2.2, (Scott Morton, 1991) These six factors may be defined as elements or parameters that act as vehicles for re-engineering to

take place. The elements or parameters role is to make able, to make feasible or effective, and to provide with means, opportunity, power, or authority to actualize. The factors referred to above were explained in details in the empirical review section.

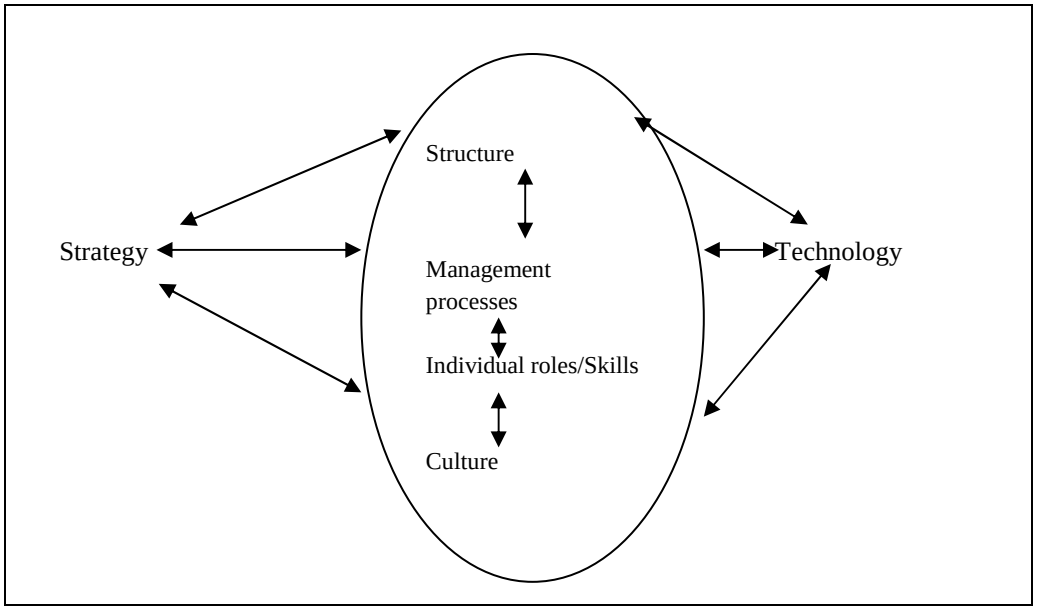

Figure 2.2: Adapted from MIT90s Framework, Source: Scott Morton (1991)

2.4.2 Organisational Performance

Blake (1998) argues that the focus of organizational performance can be classified into three key areas/issues i.e. markets, employees and investors. He asserts that the accomplishment of these three major performance objectives of markets or customer expectations and investors' expectations will most likely result in overall improvement in organizational performance. This implies that not all BPR projects have been successful in achieving dramatic performance gains. Performance has four main dimensions as follows:-

1. Financial perspective: Does implementation and execution of strategy contribute to the financial robustness?
2. Customer perspective: What value proposition will the business apply to satisfy customers and thus generate more sales to the most profitable customer groups?

3. Internal process perspective: concerned with the processes that create and deliver the customer value proposition – focuses on activities and key processes required in order for the company to excel at providing the value expected by the customers both productively and efficiently
4. Innovation and learning perspective: focuses on the intangible assets of an organization, mainly on the internal skills and capabilities that are required to support the value-creating internal processes

Piaxao and Marlow (2003) further note that efforts to improve the performance of organizations have been important since the start of the industrial era; where the first known and well documented practitioners in the area of performance improvement were Adam Smith, Eli Whitney, Buggage, Frank and Lillian Gilbreth, F.W. Taylor, and Henry Ford.

The challenges for globalized markets require major changes on the part of market participants to move beyond national-level competition and achieve international and global competitiveness. The manufacturing industry is focusing on major process performance enhancements and gains in domestic market share as a catalyst for successful diversification. Cement manufacturers are concentrating their efforts on various market segments offering the potential for growth and enhancing performance. Innovative building solutions and processes evolving threaten industry players' performance and market sustainability.

Organizational performance comprises the actual output or results of an organization as measured against its inputs. Organizational performance measures allow companies to focus attention on areas that need improvement by assessing how well work is done in terms of cost, quality, and time.

2.5 Critics of Existing Literature Review

Mothobi (2009) observes that critics of BPR argue that it is often used as a euphemism for 'denomimator reduction.' One may view productivity as a function of revenue or sales divided by the number of people required to generate the revenue (Weicher et. al 1995). BPR increases productivity by cutting costs but does nothing to increase the revenues or sales. BPR is often undertaken by firms ''playing catch up'' to avoid disaster, but it does nothing ''to generate core strategies,'' which can lead to a real growth in revenues (Ettoire, 1995).

Additionally, critics warn that although BPR may lead to a competitive advantage, it is destined to be very short-lived. When a company lowers its costs of doing business, other companies will immediately follow, and the competitive advantage is lost. Grint (2000) warns the reason why engineers are so dangerous is that, due to the obsession with benchmarking, ''all firms in an industry start converging on a point of no difference and thus of no profit''. Weicher et. al. (1995) noted that BPR, if left unchecked, seems to offer dismal prospect that competitive advantage lies in constant cost minimization.

Land (1996) questions the novelty and endurance of BPR. Re-engineering is seen by some as the latest in a long line of management fads (Mumford, 1994). At best, it is seen as little different, in terms of its underlying principles and methodologies, from other long-established and well-researched and recognized approaches to organizational redesign. Mumford (1994) for instance argued BPR is merely a repackaging of earlier principles of socio-technical redesign: 'Today BPR is being hailed as an entirely new approach to efficiency improvement. However, it is difficult to see how it differs from socio-technical design'. Likewise Passmore (1994) commended that BPR incorporates many of the essential ingredients of socio-technical approaches including attention to the horizontal integration of technical processes and the emphasis on multifunctional and empowered work teams. At worst, BPR has been deemed to be potentially disruptive or even doomed to failure.

Mumford (1994), for example, suggested that BPR is impoverished relative to socio-technical design considering that it has a weaker theoretical and methodological foundation, and because it de-emphasizes the value of the social system in favour of the technical system and competitive advantage. Egan (1995) took a stronger standpoint arguing, from the broader perspective of strategic management, that BPR offers nothing new, nothing tangible, nothing strategic and nothing demonstrable in terms of sustainable advantage. Further, Egan (1995) noted 'Organisations are far more likely to "muddle through", to adapt incrementally rather than "reinvent" themselves'.

2.6 Research Gap

Goksoy et. al. (2012) carried out a study on BPR: Strategic Tool for Managing Organizational Change an Application in a Multinational Company in the USA. Aregbeyen (2011) carried out a study on Business Re-engineering and Organizational Performance in Nigeria: A case study of First Bank Nigeria PLC (FBN). In this study, a paired data samples method between 1986 and 2008 was used with the aim of evaluating the impact of the re-engineering of operational processes on the performance of the bank. Mlay et. al.(2013) carried out a study on a Quantitative Analysis of Business Process Re-engineering and Organizational Resistance: The case of Uganda focusing on quantitative and qualitative methods.

Research on BPR has been conducted in Kenya with focus on different aspects of BPR: Thiga (1999) studied BPR at Kenya Power and Lighting Company (KPLC), while Mairura (2003) conducted a study at the Teachers Service Commission. Kahigu (2003) explored the enabling role of ICT in BPR at the Kenya Commercial Bank and recommended future studies to include additional factors which affect BPR in financial and non financial institutions. Atebe (2001) studied the effects of BPR on the business process cycles at the KPLC; Kavate (2005) conducted a study on the implementation of BPR by Gemstone dealers in Nairobi.

Mutinda (2009) conducted a study on human factors of BPR at Kenya Commercial Bank and established that the organization incorporated human resource factor in development as well as implementation of BPR efforts. A study by Magutu et. al. (2010) focused on the competitive advantage of BPR at Wrigley Company and established that the organization gained competitive advantage by implementing BPR. Onchana (2012) conducted a study on the effects of Business Process Re-engineering in the provision of services in civil service: case study of Ministry of Lands.

From past studies BPR has become an often-suggested solution for achieving sustainable business competitiveness; nonetheless not all attempts have proved to be successful. According to Hall et. al. (1993), some empirical studies showed that, although BPR has led to dramatic improvements in time, costs and quality, the overall results for a business unit or an entire company in terms of profit are sometimes disappointing.

Hammer and Champy (2001) in their popular book 'Re-engineering the Corporation' stated that 70% of BPR initiatives have failed and claim that many companies that begin re-engineering don 't succeed with it. They end their efforts precisely where they began, making no significant changes, achieving no step-change performance improvement, and fuelling employee cynicism with yet another ineffective business improvement program.

A study conducted by Doherty and Mistry (1996) found that 70% of BPR projects failed indicating the main reasons for failure as the lack of sustained management commitment and leadership, unrealistic scope and expectations and resistance to change. Coulson-Thomas (1997) pointed out that re-engineering can be risky and should not be undertaken lightly and suggests that an organisation has to clarify its motives and strategy before getting involved in a BPR exercise.

Based on varying results of past studies above, the researcher identified the need to carry out a study to establish the influence of BPR as a tool for competitive advantage in the cement manufacturing companies in Kenya. Observably, there are clear varying gaps in literature underscoring the necessity to conduct a study on BPR in Kenya where the experience and practice is largely unknown.

2.7 Summary

Business process re-engineering is a business management strategy, originally pioneered in the early 1990s, focusing on the analysis and design of workflows and business processes within an organization. BPR aimed to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world-class competitors.

In a nutshell, it is observable that many unsuccessful BPR attempts may have been due to the confusion surrounding BPR, and how it should be performed. Organizations were well aware that changes needed to be made, but did not know which areas to change or how to change them. As a result, process reengineering is a management concept that has been formed by trial and error or in other words practical experience. As more and more businesses re-engineer their processes, knowledge of what caused the successes or failures is becoming apparent. This will reveal the impact of the re-engineering of business processes on the performance of organisation and its role in creating a competitive advantage.

Arising from the literature review in the preceding sub-sections of this study, the researcher developed a conceptual framework to adequately demonstrate the relationship between Business Process Re-engineering and Competitive advantage. The conceptual framework, shown next page, outlines the inter-relationships between the independent variable (Business Process Re-engineering) and the dependent variable (competitive advantage). Further, the

framework identifies and lists the various elements or parameters comprised in each of the variables.

2.8 Conceptual Framework

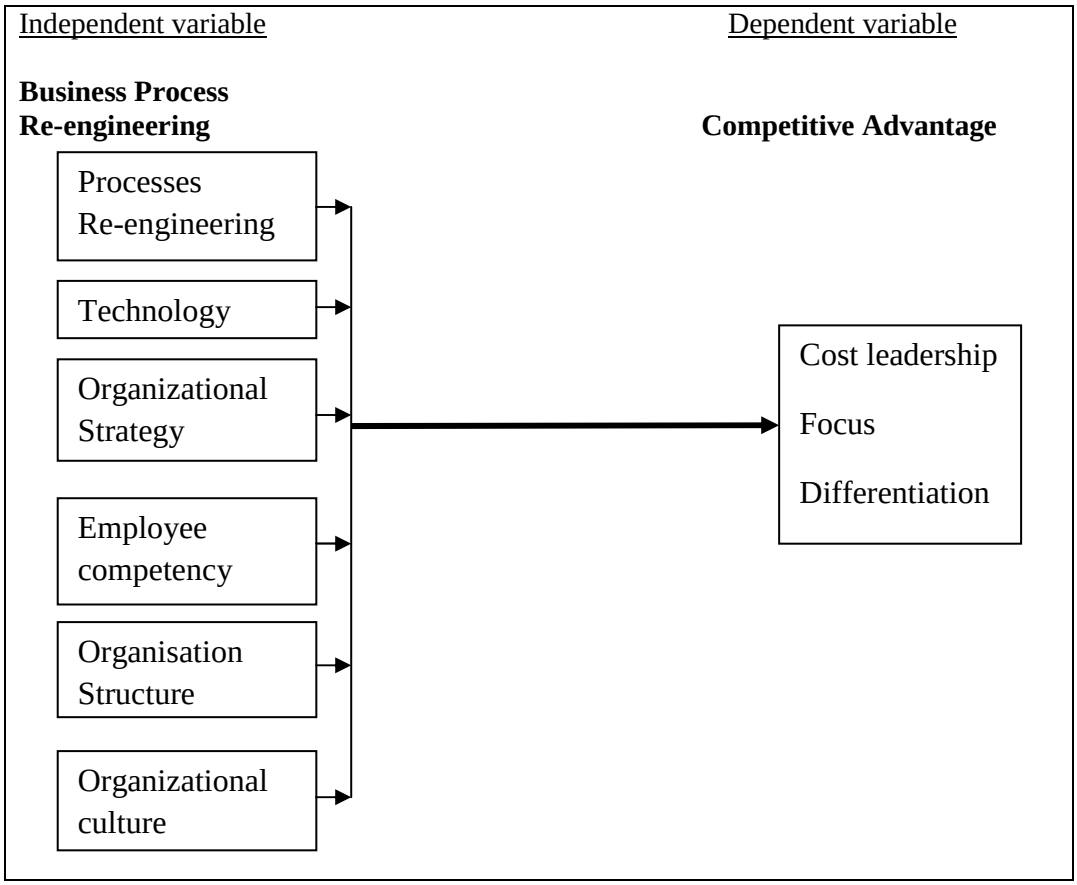

Figure 2.3 Conceptual Framework, Source: Author (2016)

2.8.1 Independent Variables

Process re-engineering

Reduction of defective products during manufacturing signifies process efficiency thus producing quality outputs resulting to competitive advantage. Alignment of production with customer needs ensures complaints are reduced as well as creating brand value for competitive edge. Availability of process information creates seamless flow which enhances better overall performance for competitive advantage. Embracing and implementing process changes ensures firms adapts to best practices thus delivering superior products than rivals resulting to competitive advantage.

Technology

Reduction in turnaround time results to good customer experience which enhances product value thus creating a competitive advantage. Better systems supporting information sharing ensures speed and efficiency in product and services processes. Customer requests and needs are received, processed and dispatched swiftly thus creating competitive advantage. Innovation is critical since dynamic market changes have ability to render technology obsolete. Firms that adopt appropriate state of art technology deliver quality products and services at minimal costs creating sustainable competitive advantage.

Employee competencies

Empowering employees to make decisions motivates them and satisfies their job creating a competitive workforce. Fostering team work builds cooperation and embraces united approach to problem solving. This promotes healthy work environment with good outputs for competitive advantage. Employee recognition based performance enhances healthy internal competition for outstanding results thus creating competitive edge. Firms with good performance management and reward systems attract and retain competent employee. These create a skilled workforce capable of delivering quality outputs.

Organisational Strategy

Firms formulate strategies that are clear and simple derived from missions and visions. These guiding paths of these strategies are through goals, objectives and activities leading to good results for competitive advantage. Policies and plans aligned to strategy guides decisions involving different activities leading to clear and consistent outputs which in long term creates competitive advantage. Internal and external benchmarking enables firm to adopt best practices delivering superior products and services for competitive advantage.

Organisational structure

Firm's structure based on the strategic goal enables it to operate efficiently leading to competitive advantage. Appropriate structure dependent upon the size and aims of firm enables flexibility, good communication and promote team work for efficient operation. In effect, firms produce quality products and services for competitive advantage. In some instances, firms reap the benefits of reduced costs arising from flat structures thus creating a competitive advantage.

Organisational culture

Cross-functional cooperation in the organisation ensures company's strategy is aligned with practices and attitudes of its culture thus achieving the competitive edge. Cultural orientation adapting to changes reduces resistance and hastens implementation of management decisions for excellent results. Fostering individual and team autonomy builds trust from employees which in turn create competitive edge. Firm's culture founded on tolerance to risk taking leads to better performance.

2.8.2 Dependent Variables

Reduction in wastages enables firms to acquire cost advantages through process improvement efficiencies. Increased revenue enable firm gain internal strengths that facilitate cost leadership. These internal strengths includes access to capital for investment in production which creates barrier to entry to new entrants, excellent skills in product designs, high level expertise in manufacturing process re-engineering and good distribution network which create competitive advantage in long term.

Improved quality of products and services enables firm acquires a differentiation strategy by creating value for customers than rival company. Success in differentiation strategy means that firms strengths includes: leading research and development, innovative product

development, strong sales and marketing team able sell product strengths and to build good customer experience and company image for quality and innovation. Increased customer experience enhances brand reputation and value leading to increase in sales and overall revenue.

Paying attention to a narrow part of market creates cost advantage or differentiation in it enabling firm achieve a focus strategy and competitive advantage. In this case a firm achieves high degree of customer loyalty which in turn dissuades other firms from engaging in direct competition.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter explored the overall methodology that was used in the study. It covered the research design, study population, instruments of data collection, data collection procedures, validity and reliability of data instruments, pilot test, data processing and analysis, study area and ethical consideration.

3.1 Research Design

Ogula (2005) described a research design as a plan, structure and strategy of investigation to obtain answers to research questions and control variance. A descriptive research was undertaken in this study using survey design. According to Orodho (2003), survey research design is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The study aimed at investigating the influence of BPR aspects on competitive advantage.

3.2 Study Population

The target population comprised all the six (6) cement manufacturing companies in Kenya. The study population was identified guided by the objectives and scope, familiarity with the topic of interest, time-frame and resource availability (Hair, et al 2003). Since the cement manufacturing companies in Kenya are only six, the study was therefore based on a census survey.

3.3 Data Collection Instruments

The primary data was collected by use of a structured questionnaire; the respondents were presented with a 1 – 5 Likert scale statements to select the degree to which they agreed with closed ended questions meant to gather their opinion in relation to their respective cement

manufacturing company gaining competitive advantage by adopting BPR initiatives. The questionnaires used in this study were key for the following purposes, a) its potential in reaching out to a large number of respondents within a short time, b) ability to give the respondents adequate time to respond to the questions, c) offer a sense of confidentiality to the respondent and d) it is objective method since no bias resulting from the personal characteristics. In this case therefore the roles of the questionnaires in this study were similar to the one in the study by Owens (2002). The questionnaire was divided into the main areas of investigation except the last part which captured the demographic characteristics of the respondents. The other sections were organized according to the specific objectives of the study. Secondary data was used, where necessary, from the annual report available on the company's websites.

3.4 Data Collection Procedures

Permission to conduct research study was granted formally by the Ethics Review Committee through the Office of the Dean, School of Humanities and Social Sciences, Pwani University. A letter of introduction accompanied by copies of questionnaires was hand delivered while some were sent via email to the respondents by the researcher. Managers were given questionnaires and requested to fill in. Questionnaires were then collected after two weeks. The study adopted self administered questionnaires.

3.5 Validity and Reliability of Data Instruments

3.5.1 Validity of the Instruments

According to Mugenda and Mugenda (2003) reliability of instrument is ensured when a researcher administers a test to a subject twice and gets the same score on the second administration as the first test. Reliability is concerned with consistency, dependability or stability of a test. The pilot study helped to improve face validity and content of the instruments, validity of an instrument was improved through expert judgment. As such, the

researcher sought assistance from the supervisors in order to improve content validity of the instruments.

3.5.2 Reliability of the Instruments

Piloting enabled the researcher to test the reliability of the questionnaires. In order to improve the reliability of the instrumen N (Mean r) e help of the supervisors, critically assessed the consistency of the responses on the pilot questionnaires to make judgment on their reliability. The study adopted Cronbach Alpha Internal Consistency Co-efficient to calculate the reliability co-efficient for the whole scale. Internal consistency refers to the degree of interrelatedness among the items. This assisted in determination of the reliability level and internal consistency of the five-point Likert scale, which consisted of five variables. Nunnally (2008) stated that α (alpha) can be viewed as the expected correlation of two tests that measure the same construct. Alpha is a function of the extent to which items in a test have high commonalities and thus low uniqueness. Therefore, the average correlation of items is an accurate estimate of the average correlation of all items that pertain to a certain construct. Cronbach alpha is calculated using mathematical formula shown below:-

$$\alpha = \frac{}{(1+ (\text{Mean r } (N-1))}$$

Where:

α Represents the alpha which is the is an unbiased estimator of reliability

N-Number of items (questions or statements)

Mean r –is the mean of number of items in a test

A reliability coefficient of 0.70 or higher is considered acceptable as confirmed by Gay (1992). The analysis of this alpha is that a standard alpha of 0.8 is required. From the scale items in this study questionnaire, the researcher used the SPSS to conduct a test of the

instruments. The alpha coefficient for the six items was .839, suggesting that the items had relatively high internal consistency that is high commonalities and thus low uniqueness.

3.6 Pilot Test

The pilot test was conducted by administering questionnaires to identified respondent in one of the six cement manufacturers in Kenya. The insights gained from the preliminary findings were used to refine the questionnaire and to develop logistical plans in readiness for the actual field study. The pilot study enabled the researcher to establish the validity and reliability of the instruments and in this case ambiguous statements, insufficient writing space, vague questions and inaccurate numbering were revealed and rectified with a view to improving the questionnaire. The responses obtained were analysed to check if the methods of data analysis are appropriate and effective.

3.7 Data Processing and Analysis

Preliminary analysis was confined to response coding, data cleaning and screening. Descriptive analysis was done using SPSS (version 22) in order to produce mean scores, standard deviation, percentages and frequencies. The findings were presented using both tabular and graphical presentation i.e. histogram, bar charts, pie charts and tables.

3.8 Study Area

Study location was Kenya. The study focused on BPR as a tool for competitive advantage and was undertaken within the time frame of the course programme. The study population comprised of managers or their representatives working in the six cement manufacturers in Kenya.

3.9 Ethical Consideration

The data collected for purposes of this study was used for academic reasons only. Further, respondents' information was accorded highest level of confidentiality. And finally, this research proposal was submitted to the Ethics and Review Committee in the University for due consideration.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis and findings of the study. It provides the general information of the census survey studied from top management level in determining the effectiveness of Business Process Re-engineering (BPR) as a tool for competitive advantage in six cement manufacturers in Kenya. The data is summarized into descriptive statistics giving percentages and frequencies.

4.2 Response Rate

The researcher analysed data collected from 25 out of possible 40 respondents who received the questionnaires indicating a return rate of 85%. The analysis was done in tables, charts and figures. Past studies by different researchers (Mireri, 2010; Kahigu, 2003) have reported return rates of between 30% - 85%. According to Mugenda and Mugenda (2003), a response rate of over 60% of the respondents is considered adequate for analysis as it is representative of the population under study.

Table 4.1: Response Rate from Respondents

	National Cement	Athi River Mining	Bamburi Cement	East Africa Portland	Savannah Cement	Mombasa cement	Total
Frequency	3	4	4	5	4	5	25
Percentage	50	57.1	50	71	80	71.4	63.25

Table 4.1 indicates that the overall response rate was 63.3%. The highest response was from Savannah Cement. It was followed by the Mombasa Cement and East Africa Portland Cement. Bamburi Cement and National Cement held the bottom level. It can be concluded

that the response rate from across the surveyed companies was above the 50% mark, proving that it was representative of the population under study.

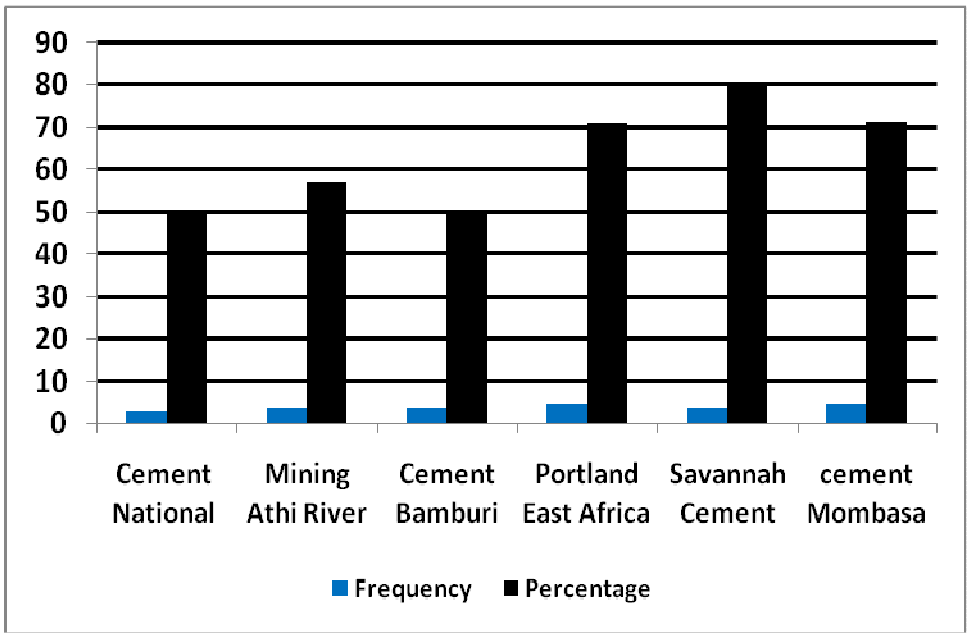

Figure 4.1: Response Rates from Respondents

Figure 4.1 demonstrates the response rates from respondents. The highest response rate was recorded at 80% in Savannah Cement Company while the lowest response rates at 50% a tie between National Cement and Bamburi Cement Company.

4.2.1 Reliability Analysis

The researcher used reliability analysis test in order to determine the degree to which research instruments yields consistence results after repeated trial. Based on results in Table 4.1 it is clear that after testing six independent variables and one dependent variable, the instruments were reliable with reliability coefficient of 0.839. The alpha coefficient for the six items is .839, suggesting that the items have relatively high internal consistency.

Table 4.1: Combined Reliability analysis

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.839	.765	6

4.3 Demographic Data Analysis

The study considered information of the respondents' regarding gender, academic qualification, years of continuous service in the organisation, position held and department working.

4.3.1 Gender of the Respondents

The respondents were provided with a self-administered questionnaire requiring them to indicate their gender. The data obtained was analyzed and the results are shown in Table 4.2.

Table 4.2: Responses on Gender of the Respondents

Gender	Frequency	Percentage
Male	**15**	**60**
Female	**10**	**40**

It was found that 60% were male and 40% were female. This shows that there is male dominance in managerial and executive positions in cement manufacturing companies as it can be clearly seen in the Figure 4.2.

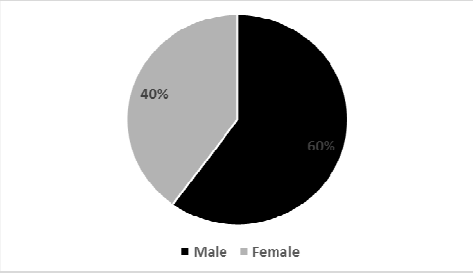

Figure 4.2: Responses on Gender of the Respondents

Figure 4.2 presents the study findings on gender of the respondents in a pie chart. It indicates that out of the total respondents, the highest were male at 60% and lowest were female at 40%.

4.3.2 Academics qualification

The researcher sought to find out the level of education of the employees working in the six cement manufacturers in Kenya based on academic qualifications or levels. The data was analyzed and the results are shown in Table 4.3.

Table 4.3 Responses on Academic Qualification

Academic qualification	Frequency	Percentage (%)
Secondary level	0	0
Diploma level	5	14.71
Degree level	18	52.94
Post graduate level	11	32.35

The findings in the table 4.3 shows that majority of the respondents were degree holders and above while minority were diploma holders. The distributions of the academic levels are clearly illustrated in the Figure 4.3.

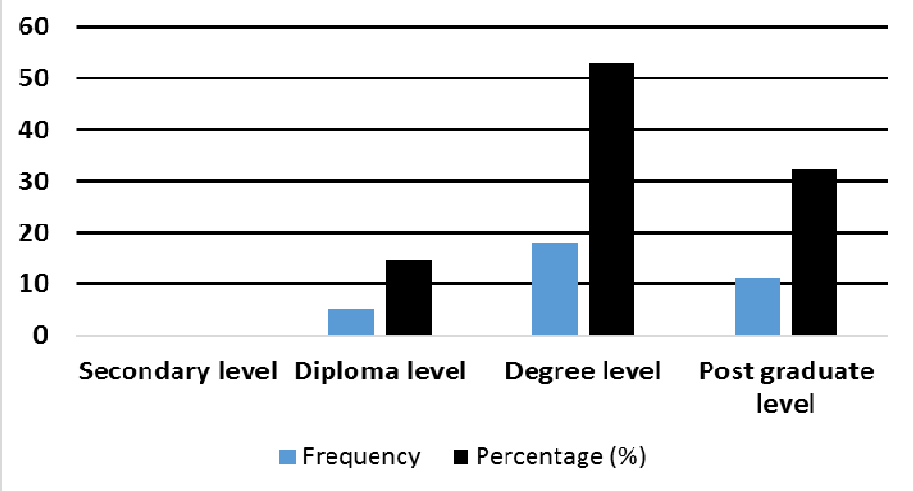

Figure 4.3: Response on Gender of the Respondents

The findings show that 14.71% were diploma holders, 52.94% were holders of university degrees and 32.35% were holders of postgraduate degrees. This shows that majority of the respondents have university education that is, 85.29% of the total respondents have at least university education and above.

4.3.3 Years of Service in the organisation

The researcher sought to determine the years of service the employees had served in their respective company. The data was analyzed and the results are shown in Table 4.4.

Table 4.4 Responses on Years of Service in the organisation

Duration	Frequency	Percentage (%)
2 years or below	5	14.71
2-5 years	7	20.59
5-10 years	15	44.11
10 years and above	7	20.59

Table 4.4 shows the study findings on the years of service of the workers. Majority of the respondents had served between 5 - 10 years while the minority had served for 2 years and below. The findings on years of service are illustrated in detail in Figure 4.4.

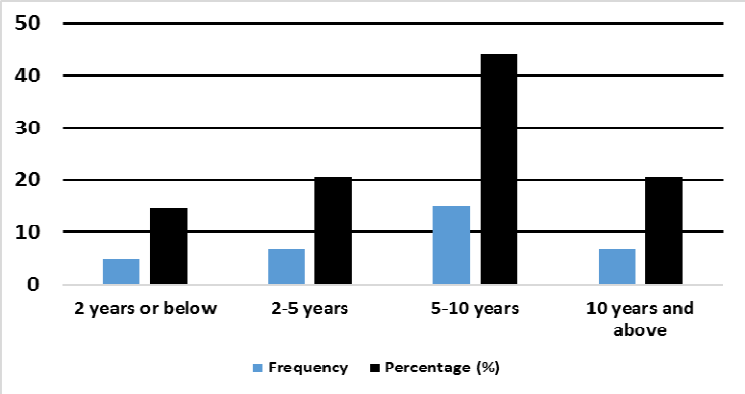

Figure 4.4: Response on years of service in the organisation

The findings showed that 14.71% of the respondents had worked for 2 years and below, 20.59% had served between 2-5 years, 44.11% had served between 5 - 10 years, and 20.59% of the respondents had worked for 10 years and above. The results shows that majority of the respondents have served their respective companies for more than 5years and thus possess required knowledge of the operations.

4.4 Determination of the effect of process re-engineering on competitive advantage

In order to determine the effect of process re-engineering on competitive advantage of Cement Manufacturers Companies in Kenya the researcher used the following variables; there is less defective products during manufacturing process, production is more aligned with customer requirements, customers' complaint have reduced, information about process is readily available, and it is evident that the company has undertaken process changes. The results of the findings are presented in Table 4.5.

Table 4.5: Responses on effect of process re-engineering on competitive advantage

Process Variables	Strongly Disagree		Disagree		No opinion		Agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	0	0.0%	1	4.0%	3	12.0%	12	48.0%	9	36.0%
b	0	0.0%	1	4.0%	8	32.0%	15	60.0%	1	4.0%
c	0	0.0%	0	0.0%	12	48.0%	9	36.0%	4	16.0%
d	0	0.0%	0	0.0%	7	28.0%	17	68.0%	1	4.0%
e	0	0.0%	1	4.0%	10	40.0%	12	48.0%	2	8.0%
Average		**0.0%**		**2.4%**		**32%**		**52%**		**13.60%**

Key:

a	There is less defective products during manufacturing process
b	Production is more aligned with customer requirements
c	Customers complaint have reduced
d	Information about process is readily available
e	It is evident that the company has undertaken process changes

The findings indicated that majority agreed that there were less defective products during manufacturing process while the minority disagreed. On the other hand, the findings indicated that majority were in agreement that production was more aligned with customer requirements with a minority disagreeing. Further, the findings indicated that majority were

uncertain on whether customers' complaints have reduced though a fewer minority strongly agreed. Moreover, the study findings indicated that majority were in agreement that information about process was readily available. Finally, the study findings indicated that while the majority were in agreement that there was evidence to demonstrate that the companies had undertaken process changes the minority though disagreed. The results above are illustrated in Figure 4.5.

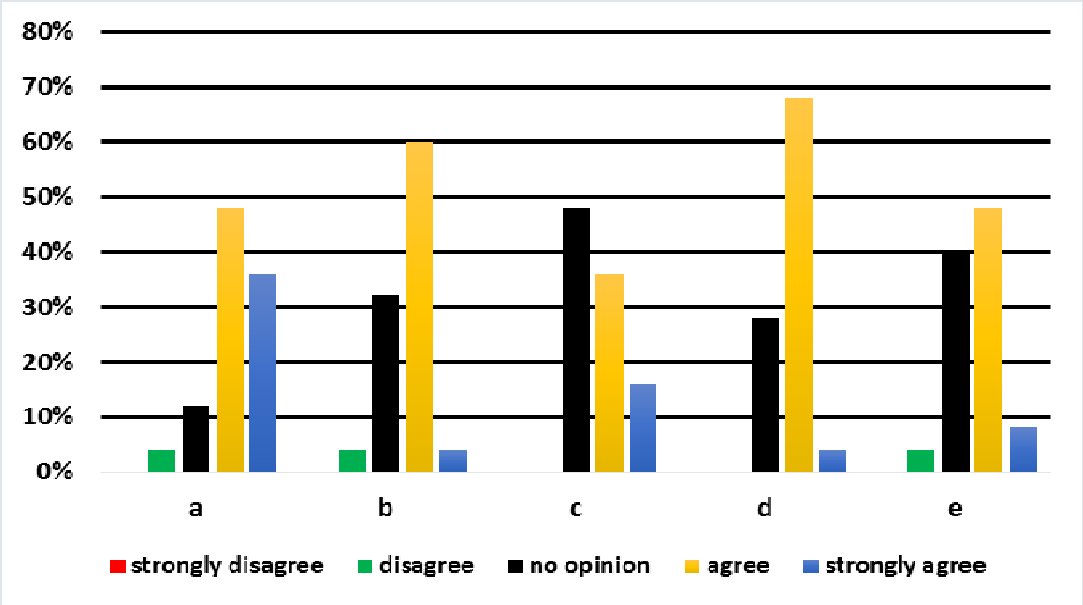

Figure 4.5: Responses on effect of process re-engineering on competitive advantage

Key

a	There is less defective products during manufacturing process
b	Production is more aligned with customer requirements
c	Customers complaint have reduced
d	Information about process is readily available
e	It is evident that the company has undertaken process changes

From Figure 4.5 the findings indicated that majority at 48% agreed that there were less defective products during manufacturing process while fewer minorities at 4% disagreed. Also, the findings indicated that majority at 60% were in agreement that production was more aligned with customer requirements while very few minorities at 4% disagreed. Further, the findings indicated that majority at 48% were uncertain on whether customers'

complaints had reduced although a small minority at 4% strongly agreed on the matter. Moreover, the study findings indicated that majority at 68% were in agreement that information about process was readily available. Finally, the study findings indicated that majority at 48% were in agreement that the companies had undertaken process changes though minority at 4% disagreed. From the study findings presented in figure 4.5 above, it is observable that none of the respondents strongly disagreed among the five variables. Further, the highest majority at 68% agreed that information about process was readily available.

The findings indicate that the majority of the respondents agreed that the number of defective products during manufacturing process have reduced due to BPR. Further, majority agreed that production was more aligned with customer requirements; information about process was readily available and the companies had undertaken process changes. Nonetheless, majority were uncertain on whether reduction in customers' complaints was as a result of BPR.

4.5 Examination of the effect of technology on competitive advantage

The researcher sought to examine the effect of technology on competitive advantage of Cement Manufacturers Companies in Kenya. With regard to this, the following variables were used; reduced turnaround time, information is readily shared through better systems, increase in speed and efficiency, innovative production process and adoption of state of the art technology. The findings of the study are presented in Table 4.6.

Table 4.6: Responses on effect of technology on competitive advantage

Technology Variables	Strongly disagree		Disagree		No opinion		Agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	0	0.0%	1	4.0%	5	20.0%	12	48.0%	7	28.0%
b	0	0.0%	0	0.0%	8	32.0%	9	36.0%	8	32.0%
c	0	0.0%	2	8.0%	7	28.0%	12	48.0%	4	16.0%
d	0	0.0%	2	8.0%	11	44.0%	11	44.0%	1	4.0%
e	0	0.0%	6	24.0%	6	24.0%	11	44.0%	2	8.0%
Average Total		**0.0%**		**8.8%**		**29.6%**		**44.0%**		**17.6%**

Key:

a Reduced turnaround time
b Information is readily shared through better systems
c Increase in speed and efficiency
d Innovative production process
e The Company has adopted state of the art technology

The findings indicated that majority agreed that technology reduced the turnaround time. As to whether information is readily shared through better systems, the findings indicated that minority had no opinion while majority agreed. Further, in relation to speed increment and efficiency, the findings indicated that minority disagreed while majority agreed. Moreover, the study findings also indicated that there was innovative production process despite the fact that there were minority in strongly agreed than those who agreed. Finally, the study findings indicated that majority agreed that their companies had adopted state of the art technology. The results of the findings above are illustrated in Figure 4.6.

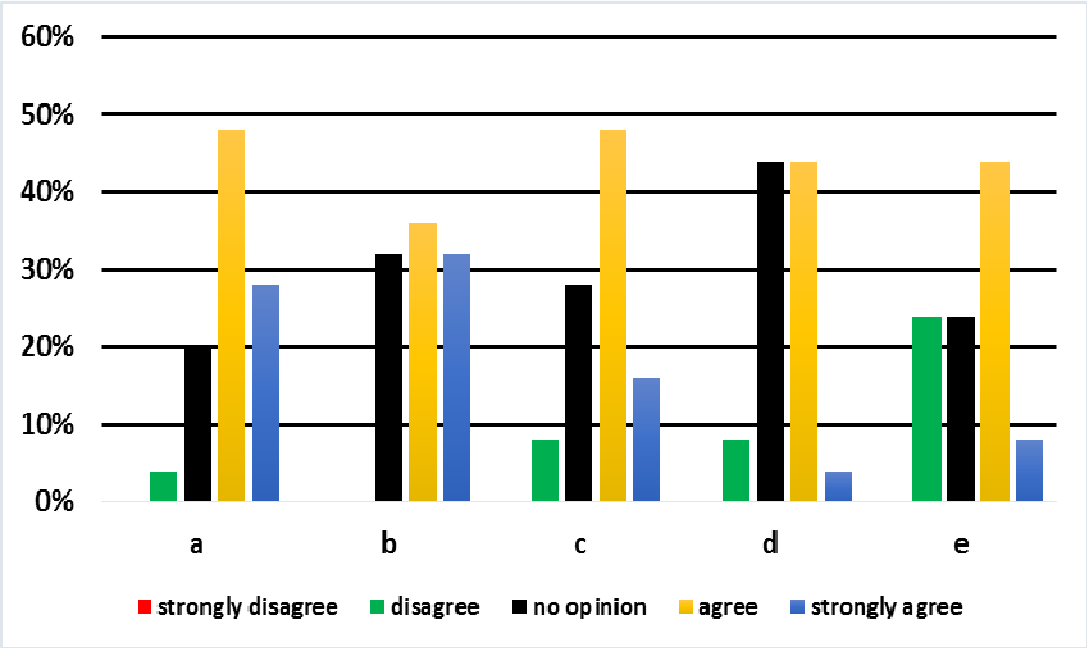

Figure 4.6 Responses on effect of technology on competitive advantage

Key:

a	Reduced turnaround time
b	Information is readily shared through better systems
c	Increase in speed and efficiency
d	Innovative production process
e	The Company has adopted state of the art technology

From Figure 4.6 the study findings indicated that majority at 48% were in agreement on reduction in turnaround time while minority at 4% disagreed. Additionally, the study findings indicated that majority at 36% agreed that information was readily shared through better systems though minority at 32% were uncertain on the matter. Further, the study findings indicated that the majority at 48% were in agreement on increment in speed and efficiency while fewer minorities at 8% strongly disagreed. Moreover, the study findings indicated that majority at 44% were in agreement that there was innovative production process although some were uncertain on this matter. Finally, the study findings indicated that majority at 44% agreed that their respective companies had adopted state of the art technology though minority at 24% were not sure about the matter.

The findings indicated that the respondents were in agreement on increment in speed and efficiency and rise in information sharing through systems which was attributable to BPR. Further, the findings indicated that majority agreed that there was reduction in turnaround time, innovative production process as well as adoption of new technology. However, the respondents were uncertain on whether the innovation on production process and adoption of new technology was as a result of BPR. Information technology is considered to be a key enabler for making transformation in business processes.

4.6 Investigation of the effect of employee competencies on competitive advantage

The aim of the researcher was to investigate on the effect of employee competencies on competitive advantage of Cement Manufacturers Companies in Kenya. In this case, the following variables were used; employees are empowered to make decisions, team work is the typical way of solving problems, there is performance recognition among employees, there exist performance improvement goals for processes, and the reward system adjust to serve the employees after changes. The results of the findings are presented in Table 4.7.

Table 4.7: Responses on effect of employee competencies on competitive advantage

Employee competence Variables	Strongly Disagree		Disagree		No opinion		Agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	0	0.0%	4	16.0%	4	16.0%	14	56.0%	3	12.0%
b	0	0.0%	4	16.0%	7	28.0%	7	28.0%	7	28.0%
c	0	0.0%	4	16.0%	5	20.0%	11	44.0%	5	20.0%
d	0	0.0%	5	20.0%	7	28.0%	9	36.0%	4	16.0%
e	1	4.0%	8	32.0%	6	24.0%	7	28.0%	3	12.0%
Average Total		**0.8%**		**20.0%**		**23.2%**		**38.4%**		**17.6%**

Key

a	Employees are empowered to make decisions
b	Team work is the typical way of solving problems
c	There is performance recognition among employees
d	There exist performance improvement goals for processes
e	The reward system adjust to serve the employees after changes

The study findings indicated that the majority agreed that employees were empowered to make decisions with minority disagreeing. Further, the findings indicated that majority were in agreement that team work was the typical way of solving problems. Additionally, the study findings indicated that majority agreed that performance recognition among employees with minority in disagreement. Likewise, majority agreed on existence of performance improvement goals for processes while minority disagreed. Finally, majority disagreed that the reward system was adjusted to serve the employees after changes. A clear illustration of the findings above is presented in Figure 4.7.

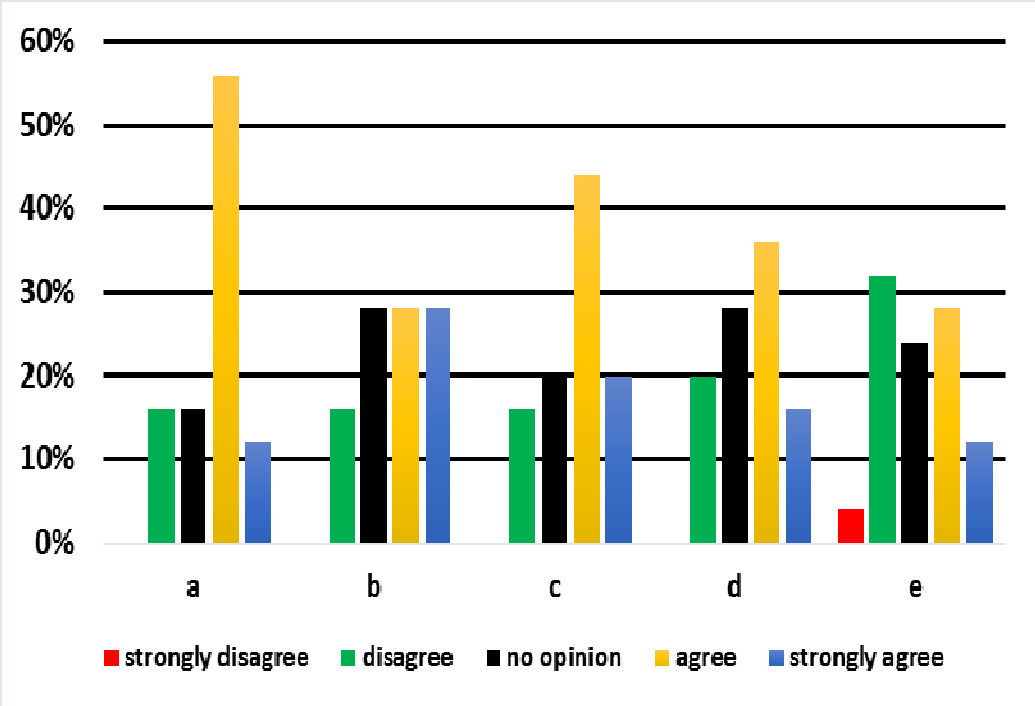

Figure 4.7: Effect of employee competencies on competitive advantage

Key:

a Employees are empowered to make decisions
b Team work is the typical way of solving problems
c There is performance recognition among employees
d There exist performance improvement goals for processes
e The reward system adjust to serve the employees after changes

From Figure 4.7 the study findings indicated that the majority at 56% agreed that the employees were empowered to make decisions. On the other hand, the study findings showed that the majority at over 50% were in agreement that team work is the typical way of solving problems though a higher number at 28% were not sure on the matter. Further, the study findings indicated that majority at 44% agreed that there was performance recognition among employees. Furthermore, the study findings indicated that the majorities at 36% were in agreement on existence of performance improvement goals for processes with a minority at 16% strongly disagreeing. Lastly, the study findings indicated that the majority at 32% disagreed that the reward system was adjusted to serve the employees after changes with a handful of minority at 4% strongly disagreeing.

From the findings above, it observable that the overall highest majority at 56% agreed that employees were empowered to make decisions. On the contrary, it was clear from the findings that on the overall the minority were in disagreement in most of the cases. The findings indicated nil strongly disagreement among the five variables.

The findings indicated that the respondents agreed that there was existence of performance improvement goals for processes and team work was being embraced as the typical way of solving problems as a result of BPR. Further, there was agreement that employees were recognized based on performance and empowerment to make decisions. However, the

findings indicated that there was disagreement that the adjustment of the reward system to serve the employees after changes, if at all done, was as a result of BPR.

The findings of the study revealed that BPR effort is considered as a technique which significantly improves corporate performance through radical transformation using clean slate approach. Finally, the findings showed that BPR is perceived as major force that steer substantive changes in job with respect to competence and skill demands.

4.7 Investigation of the effect of organizational strategy on competitive advantage

The researcher sought to investigate the effect of organizational strategy on competitive advantage of Cement Manufacturers Companies in Kenya. To achieve this objective, five variables were identified and used as follows; mission, vision and goals are clearly formulated, employees understand our quality policy statement, plans and policies are aligned to our strategy, departments have key performance indicators and benchmarking is practiced. The data collected from the findings were tabulated as shown in Table 4.8.

Table 4.8: Responses on effect of organizational strategy on competitive advantage

Organisational strategy Variables	Strongly disagree		Disagree		No opinion		Agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	2	8.0%	6	24.0%	7	28.0%	7	28.0%	3	12.0%
b	1	4.0%	6	24.0%	8	32.0%	7	28.0%	3	12.0%
c	1	4.0%	7	28.0%	10	40.0%	5	20.0%	2	8.0%
d	1	4.0%	5	20.0%	10	40.0%	9	36.0%	0	0.0%
e	2	8.0%	7	28.0%	5	20.0%	8	32.0%	3	12.0%
Average Total		**5.6%**		**24.8%**		**32%**		**28.8%**		**8.8%**

Key:

a	Mission, vision and goals are clearly formulated
b	Employees understand our quality policy statement
c	Plans and policies are aligned to our strategy
d	Departments have key performance indicators
e	Benchmarking is practiced

The study findings indicated that the majority agreed that the missions, visions and goals were clearly formulated. On the other hand, the study findings indicated that minority strongly disagreed that most employees understood their company's quality policy statement while majority were not sure on the matter. Similarly, the study findings indicated that minority strongly disagreed that plans and policies were aligned to their company's strategy while majority were uncertain on the issue. In addition, the study findings indicated that the minority strongly disagreed that their departments had key performance indicators with a simple majority were unclear on the matter. Finally, the study findings indicated that majority were in agreement that benchmarking was practiced while minority strongly disagreed on this matter. Figure 4.8 presents clearly illustration of the findings of the study this discussion.

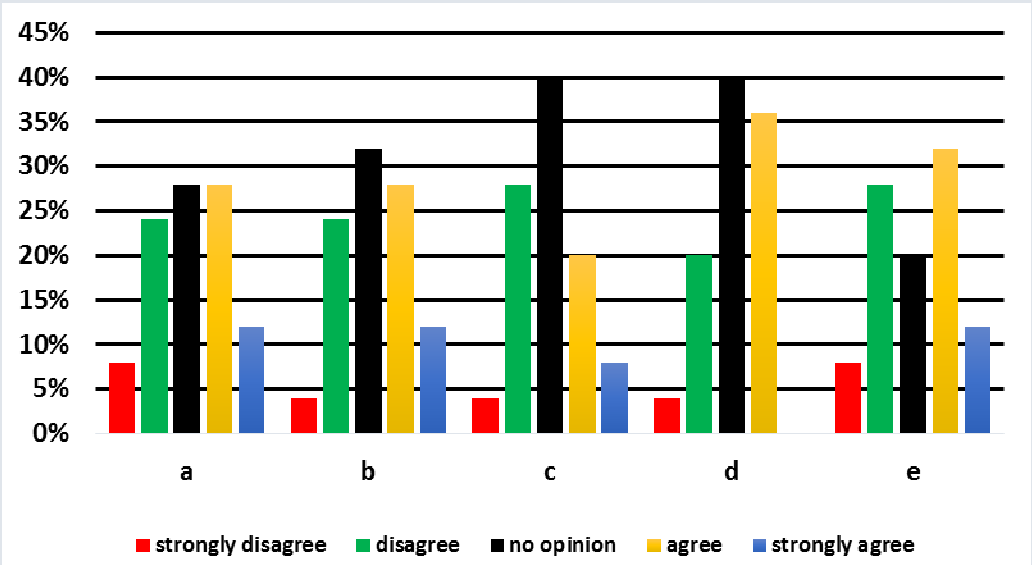

Figure 4.8: Responses on effect of organizational strategy on competitive advantage

Key:

a Mission, vision and goals are clearly formulated
b Employees understand our quality policy statement
c Plans and policies are aligned to our strategy
d Departments have key performance indicators
e Benchmarking is practiced

From Figure 4.8 the study findings indicated that majority at 28% agreed that the missions, visions and goals were clearly formulated with simple minority at 8% strongly disagreeing. Additionally, the study findings indicated that the minority at 4% strongly disagreed that employees understood their company quality policy statement although the majority at 32% had no opinion on the matter. Similarly, the study findings indicated that the minority at 4% were in strong disagreement that plans and policies are aligned to company's strategy while the majorities at 40% were not sure on the issue. Also, the study findings indicated that the minority at 4% strongly disagreed that departments had key performance indicators though the majority at 40% had no opinion on this matter. Finally, the study findings indicated that the majority at 32% agreed that benchmarking was practiced while a minority at 8% strongly disagreed. It is evident from the study findings above that the minority expressed strong disagreement in relation to the five variables above. On the other hand, the majority were in agreement in all the cases. The overall highest majority was observed between two variables that is, on alignment of plans and policies to company's strategy and existence of key performance indicators in the departments.

The findings indicated that the majority were in agreement that the missions, visions and goals were formulated in their organisations as a result of BPR initiatives. The findings of the study showed the need for change or re-alignment in organizations' vision and mission statements with its strategy. This aspect supports realization of full benefits of BPR.

4.8 Establishment of the effect of organizational structure on competitive advantage

With regard to this, the researcher sought to establish the effect of organizational structure on competitive advantage of Cement Manufacturers Companies in Kenya. As such, the following variables were used; availability of a flexible organisational design, two-way communication, team work, top management commitment and support and reduction in costs due to flat structures. The findings of the study are presented in Table 4.9.

Table 4.9: Responses on effect of organizational structure on competitive advantage

Organisational structure Variables	Strongly disagree		Disagree		No opinion		agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	0	0.0%	5	20.0%	6	24.0%	9	36.0%	5	20.0%
b	2	8.0%	5	20.0%	3	12.0%	10	40.0%	5	20.0%
c	2	8.0%	5	20.0%	5	20.0%	8	32.0%	5	20.0%
d	0	0.0%	0	0.0%	4	16.0%	16	64.0%	5	20.0%
e	0	0.0%	0	0.0%	6	24.0%	13	52.0%	6	24.0%
Average Total		**3.2%**		**12.0%**		**19.2%**		**44.8%**		**20.8%**

Key:

a There is a flexible organisational design
b Two-way communication
c Team work
d Top management commitment and support
e Reduction in costs due to flat structures

The study findings indicated that majority agreed that there was flexible organisational design while minority disagreed. In addition, the study findings indicated that majority agreed that there was two-way communication while minority strongly disagreed. Furthermore, the study findings indicated that majority agreed that there was team work with simple minority expressing strong disagreement. Moreover, the study findings indicated that

majority agreed that there was top management commitment and support though minorities were not sure on the matter. Similarly, the study findings indicated that majority agreed that there was reduction in costs due to flat structures even though minority had no opinion on the issue. These findings of the study are clearly illustrated in Figure 4.9.

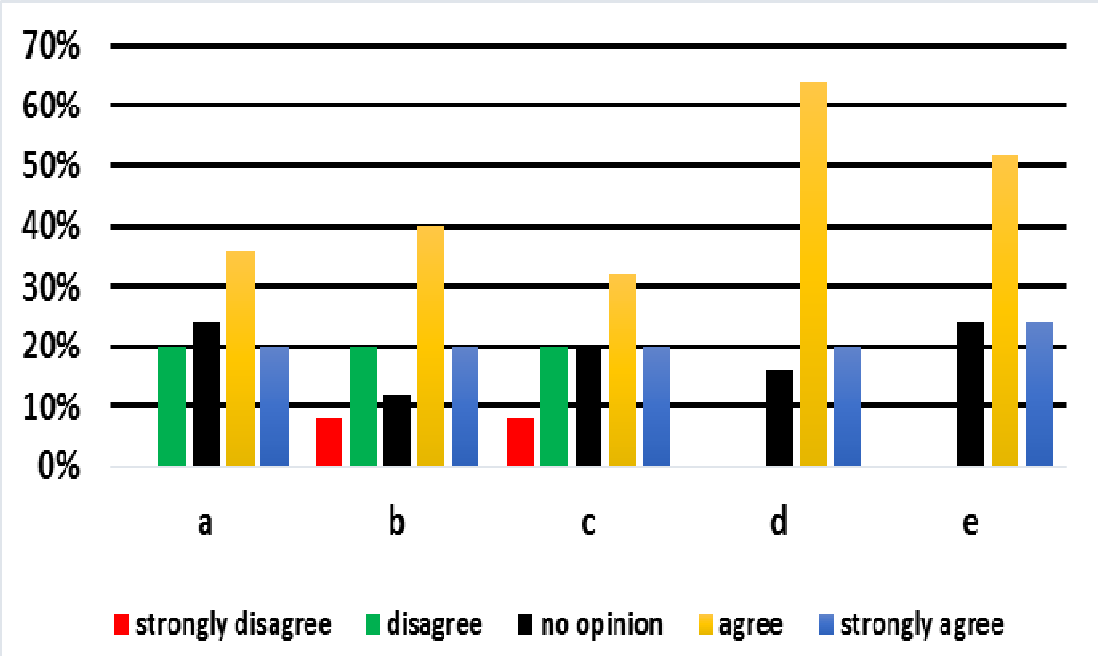

Figure 4.9: Responses on effect of organizational structure on competitive advantage

Key:

a There is a flexible organisational design
b Two-way communication
c Team work
d Top management commitment and support
e Reduction in costs due to flat structures

From Figure 4.9 the study findings indicated that majority at 36% agreed that there were flexible organisational designs with a slight minority at 20% expressing strong disagreement on the matter. Moreover, the study findings indicated that majority at 40% agreed that their companies practiced two-way communication while minority at 8% strongly disagreed on this matter. Further, the study findings indicated that majority at 32% agreed that there was team work while a minority at 8% strongly disagreed. Furthermore, the study findings indicated that majority at 64% agreed that there was top management commitment and

support although minorities at 16% were uncertain on the matter. Finally, the study findings indicated majority at 52% agreed that there was reduction in costs due to flat structures even though quite a higher minority at 24% expressed a clear disagreement on the matter. The findings show that the overall highest majority of the respondents at 64% agreed that there was top management commitment and support.

The findings indicated that the majority of the respondents were in agreement that there was team work in their organisation coupled with management commitment and support a fact that was as a result of BPR. Further, majority were in agreement that organisations stood to realize reduced costs due to flat structures, adoption of flexible organisational design and embracing the practice of two-way communication.

Organizational structure remains a cornerstone in achievement of effective BPR. Ineffective BPR teams and problems with integration, lack of description and allocation of duties and responsibilities remains as key concern. Additionally, lack of BPR project planning & consideration, inadequacy in proper modeling and ineffective design of goals can affect the influence of BPR on competitive advantage.

4.9 Establishment of the effect of organizational culture on competitive advantage

The researcher sought to establish the effect of organizational culture on competitive advantage of Cement Manufacturers Companies in Kenya. The following variables were used; the existing organizational culture is adaptable to change, there exists cross-functional cooperation in the organization, risk taking tolerance, individual/team autonomy and performance reward system. The findings of the study are presented in Table 4.10.

Table 4.10: Effect of organizational culture on competitive advantage

Organisational culture Variables	Strongly disagree		Disagree		No opinion		agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
a	0	0.0%	1	4.0%	9	36.0%	10	40.0%	5	20.0%
b	0	0.0%	1	4.0%	4	16.0%	12	48.0%	8	32.0%
c	0	0.0%	1	4.0%	6	24.0%	12	48.0%	6	24.0%
d	1	4.0%	2	8.0%	5	20.0%	14	56.0%	3	12.0%
e	0	0.0%	2	8.0%	6	24.0%	10	40.0%	7	28.0%
Average Total		**0.8%**		**5.6%**		**24.0%**		**46.4%**		**23.2%**

Key:

a The existing organizational culture is adaptable to change

b There exist cross-functional cooperation in the organization

c Risk taking tolerance

d Individual/team autonomy

e Performance reward system

The study findings indicated that majority agreed that there was existence of organizational culture which was adaptable to change while minority disagreed. Additionally, the study findings indicated that majority agreed on existence of cross-functional cooperation in the organization with less minority disagreeing. Further, the study findings indicated that majority agreed that there was risk taking tolerance other than few minorities who disagreed. On the other hand, the study findings indicated that majority agreed that there was individual/team autonomy the minority strongly disagreed. Finally, the study findings indicated that majority agreed that there was performance reward system while minority disagreed. Figure 4.10 presents a clear illustration of the findings.

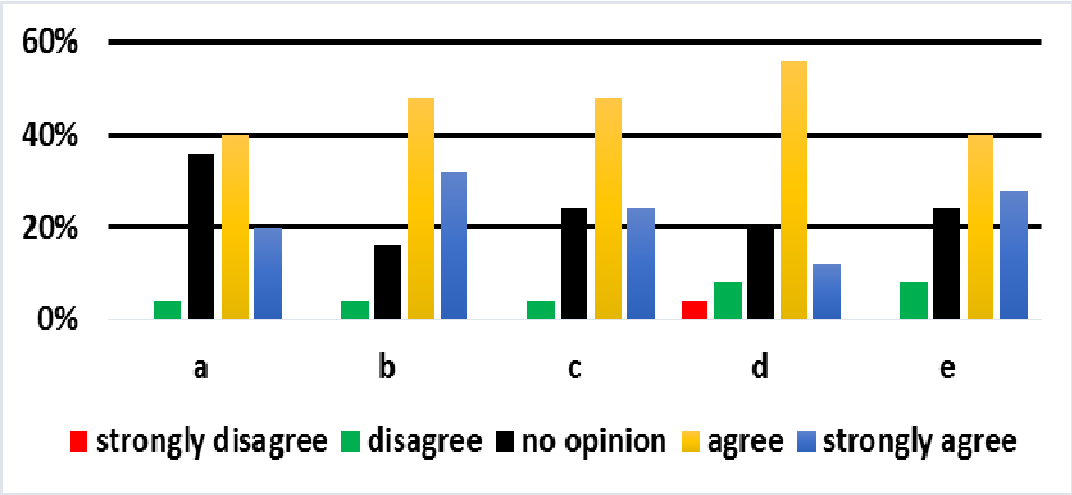

Figure 4.10: Responses on effect of organizational culture on competitive advantage

From Figure 4.10 the study findings indicated that majority at 40% agreed that the existing organizational culture was adaptable to change while minority at 4% disagreed. The study findings on the bar graph indicated that the majority at 48% were in agreement on existence of cross-functional cooperation in the organization with fewer minorities at 4% disagreeing. Further, the study findings indicated that majority at 48% agreed that there was risk taking tolerance while a simple minority at 4% disagreed. Besides, the study findings indicated that the majority at 56% agreed that there was individual and team autonomy while fewer minority at 4% strongly disagreed on the matter. Finally, the study findings indicated that majorities at 40% were in agreement that there was performance reward system while about 8% of the minority disagreed. The findings show that majority were in agreement with the five variables above. From the findings, the overall highest majority of the respondents at 56% agreed that there was individual and team autonomy.

The findings indicated that majority were in agreement on existence of cross-functional cooperation and organizational culture adaptable to change a fact that was attributable to BPR. Further, majority agreed that there was performance reward system, tolerance to risk taking and individual autonomy in their organisation which was as well as a result of BPR.

The findings of the study showed that the six cement manufacturers were more guided, took risks, and were mindful of their mistakes to their customers. Further, they had the capacity and experience for change. The cement manufacturers were continually improving their internal ability to value customers.

4.10 Role of BPR on competitive Advantage

Table 4.11: Responses on role of BPR on competitive advantage

Competitive Advantage Variables	Strongly Disagree		Disagree		No opinion		Agree		Strongly agree	
	F	%	F	%	F	%	F	%	F	%
a	3	12.0%	4	16.0%	5	20.0%	7	28.0%	6	24.0%
b	3	12.0%	3	12.0%	3	12.0%	9	36.0%	7	28.0%
c	1	4.0%	5	20.0%	6	24.0%	9	36.0%	4	16.0%
d	0	0.0%	6	24.0%	7	28.0%	8	32.0%	4	16.0%
Average Total		**7.0%**		**18.0%**		**21.0%**		**33.0%**		**21.0%**

Key:

a Improved quality of products and services

b Reduction in wastages

c Increase in revenue

d Increased customer experience

The study findings indicated that respondents were in agreement that there was improved quality of products and services with fewer minorities strongly disagreeing. On the other hand, the study findings indicated that majority were in agreement that there was reduction in wastages while the minority strongly disagreed. Further, the study findings indicated that majority were in agreement on the increase in revenue while minority strongly disagreed. Finally, the study findings indicated that majority agreed on increment in customer

experience with fewer minorities strongly agreeing. A clear illustration is presented in Figure 4.11.

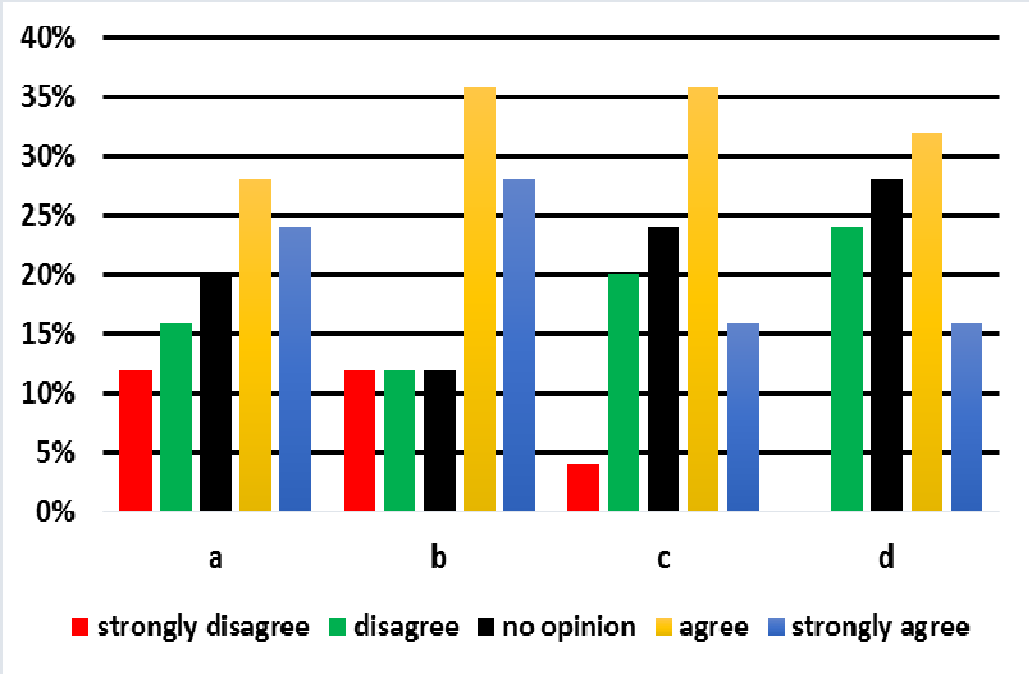

Figure 4.11: Responses on role of BPR on competitive advantage

Key:

a	Improved quality of products and services
b	Reduction in wastages
c	Increase in revenue
d	Increased customer experience

From Figure 4.11 the study findings indicated that majorities at 28% were in agreement on improvement on quality of products and services with fewer minorities at 12% strongly disagreeing. Additionally, the study findings indicated that the highest majority at 36% agreed that wastages had reduced while minority at 12% strongly disagreed. Further, the study findings indicated that majorities at 36% were in agreement on increment in revenue with fewer minorities at 4% strongly disagreeing. Finally, the study findings indicated majority at 32% were in agreement on increment in customer experience with minority at 24% disagreeing. The study findings revealed that for the first three variables above, the

minorities were strongly disagreeing while the majorities were in agreement. Conversely, in the last variable, majority were in agreement while the minority strongly agreed. The findings indicated that majority were in agreement on reduction in wastages and improvement on quality of products and services. This was as a result of BPR. Further, the majorities were in agreement on increment in revenue and improved customers' experience. However, the findings indicated that a high number were uncertain on whether increased revenue and improved customers experience witnessed in their organisations was as a result of BPR.

The findings of this study showed that respondents agreed that there was a very strong business case to implement BPR. To some extent these findings support previous studies such as Kaptoge (2008).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The Chapter discusses the summary of findings, conclusions and the recommendations that were laid down by the researcher. The chapter concludes by giving suggestions for further research on the role of BPR as a tool for competitive advantage in cement manufacturing companies in Kenya.

5.2 Summary of the Major Findings

The study was guided by six specific objectives whose major findings were summarized below.

5.2.1 Summary of the Major findings related to determinants of the effect of process re-engineering on competitive advantage

The findings showed that the number of defective products during manufacturing process have reduced due to BPR. Observably, majority as well were in agreement that production was more aligned with customer requirements; information about process was readily available and the companies had undertaken process changes. Nonetheless, there was uncertainty on whether reduction in customers' complaints was as a result of BPR. A comparative analysis of the findings for the six cement manufacturers is clearly outlined below.

Amongst the six cement manufacturers, there was over 50% in agreement that process re-engineering influenced their competitive advantage. However, the findings revealed slight disparity which was observed among the six cement manufacturers companies. For instance, majority of respondents at 52% from Mombasa Cement Limited were not sure on whether process re-engineering influenced their competitive advantage.

5.2.2 Summary of the Major findings related to examination of the effect of technology on competitive advantage

The findings revealed that there was increment in speed and efficiency and rise in information sharing through systems which was attributable to BPR. Similarly, there was reduction in turnaround time, innovative production process as well as adoption of new technology. However, the respondents were uncertain on whether the innovation on production process and adoption of new technology was as a result of BPR. Information technology is considered to be a key enabler for making transformation in business processes.

Majority at 44.33% from the six cement manufacturing companies in Kenya agreed that technology impacted on achievement of competitive advantage. The findings recorded varying disparity whereby most of the respondents who were in agreement on the matter hailed from Athi River Mining Limited at 60%. On the other, the findings indicated similarities whereby majority at 50% and 56% from Savannah Cement Limited and Mombasa Cement Limited respectively were uncertain on whether technology influenced achievement of competitive advantage.

5.2.3 Summary of the Major findings related to investigation of the effect of employee competencies on competitive advantage

From the study findings, majority were in agreement that there was existence of performance improvement goals for processes and team work was being embraced as the typical way of solving problems as a result of BPR. There was general consensus that employees were recognized based on performance and empowerment to make decisions. Difference emerged though showing disagreement with the idea that the reward system was adjusted to serve the employees after changes. As matter of fact there was feeling that the reward adjustment was not as a result of BPR. Further analysis of the findings revealed more results as shown below.

Majority at 40.61% agreed that employees' competencies impacted on competitive advantage of Cement Manufacturers Companies in Kenya. Further, majority at 45% and 52% from Savannah Cement Limited and Mombasa Cement Limited respectively disagreed on effect of employee competencies on competitive advantage.

5.2.4 Summary of the Major findings related to the investigation of the effect of organizational strategy on competitive advantage

The study findings revealed that the majority were in agreement that the missions, visions and goals were formulated in their organisations as a result of BPR initiatives. More importantly there is need for change or re-alignment in organizations' vision and mission statements with its strategy. A relative analysis of the findings from cement manufacturing companies in Kenya is briefly presented in the next paragraph.

Majority at 30.72% were in agreement on effect of organizational strategy on competitive advantage. Moreover, the findings showed that the number of respondents who were uncertain surpassed the majority by slight difference at 30.83%. The findings indicated a major disparity whereby majority of the respondents from Savannah Cement Limited at 65% were not sure on effect of organizational strategy on competitive advantage.

5.2.5 Summary of the Major findings related to the establishment of the effect of organizational structure on competitive advantage

The study findings affirmed the concept of organizational structure as a cornerstone in achievement of effective BPR. Majority agreed on the need to promote effective BPR teams and ensuring clear description and allocation of duties and responsibilities. Additionally, there is need for BPR project planning and proper modeling & effective design of goals in order to achieve competitive advantage. Further, analysis of results are clearly explained below.

The findings indicated that majority of the respondents at 47.67% were in agreement on effect of organizational structure on competitive advantage of cement manufacturing companies in Kenya. From the findings, the highest majority who agreed at 75% were from National Cement Limited. In contrast, the findings indicated that majority at 30% of the respondents from Savannah Cement disagreed.

5.2.6 Summary of the Major findings related to the establishment of the effect of organizational culture on competitive advantage

The findings indicated that majority were in agreement on existence of cross-functional cooperation and organizational culture adaptable to change a fact that was attributable to BPR. There was performance reward system, tolerance to risk taking and individual autonomy in their organisation. The findings of the study showed that the six cement manufacturers were more guided, took risks, and were mindful of their mistakes to their the customers. Further, they had the capacity and experience for change. The cement manufacturers were continually improving their internal ability to value customers.

The findings indicated that majority of the respondents at 48.45% were in agreement on effect of organizational culture on competitive advantage of cement manufacturing companies in Kenya. Further, the highest majority at 75% who agreed hailed from Bamburi Cement Company Limited. On the other hand, the findings indicated that the majority at 44% from Mombasa Cement Limited were uncertain on the matter.

5.3 Conclusions

Based on the findings of the study, organizations should not be hesitant to undertake radical changes since BPR is capable of driving competitive advantage. Notably, organisations are likely to realise gains and dramatic improvements in critical contemporary measures of performance in cost reduction, quality, service, speed, productivity and customer satisfaction.

The key areas of performance improvements can include reduction in wastages, improvement in quality of products and services, increased revenue and improved customers experience. The findings showed that respondents agreed that there was a very strong business case to implement BPR.

Process re-engineering adopts change management orientation that forms a crucial component of any BPR as shown by findings of the study. This proposition is further supported in previous studies such as Mireri, 2010; Zairi and Sinclair, 1995. Moreover, the findings showed that success of reengineering project needs process orientation by top managers. It can be deduced that planned process changes in an organization ought to be communicated in the entire organization in a motivating way, in order to involve employees in readiness for change in process.

The findings of this study showed that the major driving force behind BPR project was aimed at improving efficiency followed by customer service improvement, cost reduction, and lastly to increase profitability. Understandably, some firms pursued these approaches in order to achieve sustainable success even though they were not aware that these are aspects of BPR that acts as drivers of competitive advantage. The findings of this study were in line with the findings of the survey conducted by Ranganathana and Dhaliwal (2001) on the success and failure of BPR efforts in Singapore. In both cases, it was revealed that BPR was used by manufacturing firms. In the case study conducted in Singapore, more industrial sectors were implementing BPR, including retailing and financial sector.

The cement manufacturing companies in Kenya have positive approach towards BPR initiatives. In order for BPR to succeed as a tool for competitive advantage, the key measures to focus on include; understanding process change initiatives, adoption of supportive technology, engaging competent employees, adopting right organisation structure.

Additionally, organisation strategy is key through strategic planning as well as promoting good corporate culture respective to change.

It evident that improvement in corporate performance was more significant through radical transformation using clean slate approach which brought in more easy acceptability of the change. This made the organization more fertile to implement and manage changes. This perception also led its way to innovation since it supported clean slate approach. If this effort is properly managed, it can motivate employees to give out of the box solutions which perpetually can add up to help the organization to gain competitive edge. Based on the study findings, it is notable that that BPR brings substantive changes in job with respect to employee competence. Through insightful strategic planning as a result of BPR initiatives, organizations understand the kind of human resource to attract, recruit and retain.

5.4 Recommendations

Based on findings of the study, it is important for an organization to undertake an analysis of the current situation for successful BPR implementation. This will offer an understanding of the key measures that drive BPR such as employee competence, organisational structure and organisational culture. It is recommended that organizations should aim to initiate changes in the entire organization instead of undertaking small changes in departments and strategic business units which may lead to delays or impact negatively on customer service thus affecting performance. At the heart of re-engineering initiatives is the customer.

BPR aims to achieve dramatic improvements in critical contemporary measures of performance in cost reduction, quality, service, speed, productivity and customer satisfaction. As such, the customer is one of the reason behind the reengineering effort. It is worthwhile to note that the role of information technology remains a fundamental measure of the reengineering initiative.

Organisational strategy is paramount in Business Process Re-engineering and therefore strategic planning should be put into consideration. Corporate culture is a crucial component for realization of re-engineering initiatives and achievement of competitive advantage.

There is need to flourish and operate successfully in today highly competitive and constantly changing market place. Certainly it is imperative for companies to give up obsolete ways of doing business and adapt to dynamic environment. Some firms are initiating different approaches aimed at achieving sustainable success though unknowingly they are pursuing different aspects of BPR that acts as drivers of competitive advantage. There is need to adopt a more rigorous Scientific approach to enable the cement firms adopt appropriate aspects of BPR for achievement of competitive advantage and prevent any failure. Process innovation is highly recommended as the sure step to sustainable competitive advantage.

This study therefore recommends that:-

i. BPR must be accompanied by strategic planning, which should concentrate on exploiting technology as a competitive tool.

ii. Organisational structure is paramount to BPR. This is a key aspect with regard to roles, responsibilities and resources distribution.

iii. Information technology should be an integral part of the reengineering initiative ideally from the beginning.

iv. Corporate culture should be part and parcel of the entire BPR initiative and should emphasize constant reengineering process. Further, the focus should be on uneven processes that lead to delays and other undesired effects on customer service.

5.5 Suggestions for Further Studies

The study focused on BPR as a tool for competitive advantage in cement manufacturing companies in Kenya. As such, no attempt was made to establish relationships of key BPR measures/parameter that is process re-engineering, employee competence, technology, organisational strategy, organisational structure and organisational culture and competitive advantage and test them for statistical significance.

This study focused on cement manufacturers in Kenya owing to its increasing critical role in the economy of the country. On the other hand, the cement manufacturers continue to experience challenges that threaten their survival in the globalized market. In light of the forgoing, the role of BPR cannot be overemphasized as a tool for competitive advantage. In this regard, it is recommended that more research is carried out in the cement industry and other heavy manufacturing companies in Kenya.

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APPENDICES

APPENDIX I: Questionnaire for Managers

The main objective of the study is to investigate the effectiveness of Business Process Re-engineering (BPR) as a tool for competitive advantage in six cement manufacturers in Kenya. Please answer all questions to the best of your ability. There is no right or wrong answer. The survey should take approximately 10 minutes. Kindly rate the extent to which you agree with each statements below by indicating a tick corresponding to your personal opinion on one option for each statement. This study is strictly for academic research and confidentiality shall be observed.

BPR is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance in cost reduction, quality, service, speed, productivity and customer satisfaction.

SECTION A: BUSINESS PROCESS RE-ENGINEERING

1. To what extent would you describe your level of agreement with the following statements about process re-engineering in your Company?

Process Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
There is less defective products during manufacturing process					
Production is more aligned with customer requirements					
Customers complaint have reduced					
Information about process is readily available					
It is evident that the company has undertaken process changes					

2. To what extent would you describe your level of agreement with the following statements about technological initiatives in your Company?

Technology Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
Reduced turnaround time					
Information is readily shared through better systems					
Increase in speed and efficiency					
Innovative production process					
The Company has adopted state of the art technology					

3. To what extent would you describe your level of agreement with the following statements about employee competencies in your Company?

Employee competency Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
Employees are empowered to make decisions					
Team work is the typical way of solving problems					
There is performance recognition among employees					
There exist performance improvement goals for processes					
The reward system adjust to serve the employees after changes					

4. To what extent would you describe your level of agreement with the following statements about organizational strategy adopted in your Company?

Organizational strategy Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
Mission, vision and goals are clearly formulated					
Employees understand our quality policy statement					
Plans and policies are aligned to our strategy					
Departments have key performance indicators					
Benchmarking is practiced					

5. To what extent would you describe your level of agreement with the following statements about organizational structure in your Company?

Organizational structure Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
There is a flexible organisational design					
Two-way communication					
Team work					
Top management commitment and support					
Reduction in costs due to flat structures					

6. To what extent would you describe your level of agreement with the following statements about organizational culture in your Company?

Organizational culture Variables	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
The existing organizational culture is adaptable to change					
There exist cross-functional cooperation in the organization					
Risk taking tolerance					
Individual/team autonomy					
Performance reward system					

7. To what extent would you describe your level of agreement with the following statements about sustained competitive advantage arising from BPR?

Competitive advantage indicators	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
Improved quality of products and services					
Reduction in wastages					
Increase in revenue					
Increased customer experience					

SECTION B: BACKGROUND INFORMATION

8. Please indicate your gender

Female	[ ]	Male	[ ]

9. What is your highest academic qualification?

Secondary level	[ ]	Degree level	[ ]
Diploma level	[ ]	Postgraduate level	[ ]

10. How long have been working in your Company?

2 yrs or below	[ ]	5 to 10 yrs	[ ]
2 to 5 yrs	[ ]	10 yrs and above	[ ]

11. Position held…….
12. Department……

Thank you for your feedback

Appendix II: Comparative Analysis of the findings from six cement manufacturers

		strongly disagree	disagree	no opinion	agree	strongly agree
Process Re-engineering	National Cement Limited	0.00%	0.00%	26.64%	60.02%	13.32%
	Athi River Mining Limited	0.00%	0.00%	25.00%	55.00%	20.00%
	Bamburi Cement Company Limited	0.00%	15.00%	25.00%	45.00%	15.00%
	East Africa Portland Cement Limited	0.00%	0.00%	36.00%	48.00%	16.00%
	Savannah Cement Limited	0.00%	0.00%	20.00%	65.00%	15.00%
	Mombasa Cement Limited	0.00%	0.00%	52.00%	44.00%	4.00%
	Total Average	0.00%	2.50%	30.77%	52.84%	13.89%
Technology	National Cement Limited	0.00%	0.00%	0.00%	40.00%	60.00%
	Athi River Mining Limited	0.00%	0.00%	10.00%	60.00%	30.00%
	Bamburi Cement Company Limited	0.00%	10.00%	20.00%	55.00%	15.00%
	East Africa Portland Cement Limited	0.00%	8.00%	28.00%	56.00%	8.00%
	Savannah Cement Limited	0.00%	5.00%	50.00%	35.00%	10.00%
	Mombasa Cement Limited	0.00%	24.00%	56.00%	20.00%	0.00%
	Total Average	0.00%	7.83%	27.33%	44.33%	20.50%
employee competence	National Cement Limited	0.00%	0.00%	0.00%	66.68%	33.32%
	Athi River Mining Limited	0.00%	0.00%	0.00%	55.00%	45.00%
	Bamburi Cement Company Limited	0.00%	10.00%	20.00%	55.00%	15.00%
	East Africa Portland Cement Limited	0.00%	4.00%	36.00%	40.00%	20.00%
	Savannah Cement Limited	0.00%	45.00%	40.00%	15.00%	0.00%
	Mombasa Cement Limited	4.00%	52.00%	32.00%	12.00%	0.00%
	Total Average	0.67%	18.50%	21.33%	40.61%	18.89%
organisational strategy	National Cement Limited	0.00%	0.00%	0.00%	53.32%	46.68%
	Athi River Mining Limited	0.00%	0.00%	45.00%	40.00%	15.00%
	Bamburi Cement Company Limited	5.00%	20.00%	15.00%	55.00%	5.00%
	East Africa Portland Cement Limited	0.00%	28.00%	36.00%	36.00%	0.00%
	Savannah Cement Limited	0.00%	35.00%	65.00%	0.00%	0.00%
	Mombasa Cement Limited	24.00%	52.00%	24.00%	0.00%	0.00%
	Total Average	4.83%	22.50%	30.83%	30.72%	11.11%
organisational structure	National Cement Limited	0.00%	0.00%	0.00%	80.02%	19.98%
	Athi River Mining Limited	0.00%	0.00%	0.00%	50.00%	50.00%
	Bamburi Cement Company Limited	0.00%	0.00%	5.00%	75.00%	20.00%
	East Africa Portland Cement Ltd	0.00%	4.00%	32.00%	40.00%	24.00%
	Savannah Cement Limited	5.00%	30.00%	30.00%	25.00%	10.00%
	Mombasa Cement Limited	12.00%	32.00%	36.00%	16.00%	4.00%
	Total Average	2.83%	11.00%	17.17%	47.67%	21.33%

organisational culture	National Cement Limited	0.00%	0.00%	0.00%	66.68%	33.32%
	Athi River Mining Limited	0.00%	0.00%	25.00%	40.00%	35.00%
	Bamburi Cement Company Limited	0.00%	0.00%	5.00%	75.00%	20.00%
	East Africa Portland Cement Limited	0.00%	0.00%	28.00%	36.00%	36.00%
	Savannah Cement Limited	0.00%	10.00%	30.00%	45.00%	15.00%
	Mombasa Cement Limited	4.00%	20.00%	44.00%	28.00%	4.00%
	Total Average	0.67%	5.00%	22.00%	48.45%	23.89%
competitive advantage	National Cement Limited	0.00%	0.00%	0.00%	58.35%	41.65%
	Athi River Mining Limited	0.00%	0.00%	0.00%	56.25%	43.75%
	Bamburi Cement Company Limited	0.00%	0.00%	18.75%	31.25%	50.00%
	East Africa Portland Cement Limited	0.00%	0.00%	40.00%	55.00%	5.00%
	Savannah Cement Limited	0.00%	50.00%	50.00%	0.00%	0.00%
	Mombasa Cement Limited	35.00%	50.00%	10.00%	5.00%	0.00%
	Total Average	5.83%	16.67%	19.79%	34.31%	23.40%

Appendix III: Responses in mean scores and Standard Deviation

	Minimum	maximum	Mean	Std. Deviation
Process Re-engineering variable				
There is less defective products during manufacturing process	2	5	4.03	.904
Production is more aligned with customer requirements	1	5	3.53	.896
Customers complaint have reduced	2	5	3.62	.888
Information about process is readily available	2	5	3.65	.597
It is evident that the company has undertaken process changes	2	5	3.56	.824
Technology variables				
Reduced turnaround time	2	5	3.91	.900
Information sharing through systems	2	5	4.04	.919
Increase in speed and efficiency	1	5	4.53	.051
Innovative production process	1	5	3.26	.898
Adoption of new technology	2	5	3.24	.890
Employee competence variables				
Employees are empowered to make decisions	1	5	3.35	1.098
Team work is the typical way of solving problems	1	5	4.38	.206
There is performance recognition among employees	2	5	3.53	.961
There exist performance improvement goals for processes	1	5	4.41	.104
The reward system adjust to serve the employees after changes	1	5	2.76	1.182
Organisational strategy variables				
Formulated mission, vision and goals	1	5	3.00	1.181
Quality policy statement	1	5	2.85	1.258
Plans and policies implemented	1	5	2.85	1.234
Key performance indicators	1	5	2.88	1.094
Benchmarking	1	5	2.94	1.254
Organisational structure variables				
Flexible organisational design	2	5	3.32	1.036
Two-way communication	1	5	3.24	1.372
Team work	1	5	4.32	.273
Top management commitment and support	2	5	4.01	.753
Reduction in costs due to flat structures	1	5	3.76	1.017
Organisational culture variables				
The existing organizational culture is adaptable to change	2	5	4.21	.912
There exist cross-functional cooperation in the organization	2	5	4.39	.978
Risk taking tolerance	1	5	3.62	1.206
Individual autonomy	1	5	3.41	1.234
Performance reward system	1	5	3.68	1.173

Competitive Advantage variables				
Improved quality of products and services	1	5	4.15	0.520
Reduction in wastages	1	5	4.35	0.475
Increase in revenue	1	5	3.18	1.267
Increased customer experience	1	5	3.15	1.258