

**PERCEIVED INFLUENCE OF BACKWARD INTEGRATION STRATEGY
ON ORGANIZATIONAL EFFICIENCY IN THE CEMENT INDUSTRY IN
KENYA**

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DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

Signed 

Date...19th November 2020

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D61/5318/2017

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

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DEDICATION

I dedicate this research project to my late father and my mother for the strong educational foundation they laid for me as my initial educators. To my big sister Patricia for the persistent and unwavering nudge for me to achieve this milestone.

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ABBREVIATIONS AND ACRONYMS

ARM: Athi River Mining

BCL: Bamburi Cement Limited

DRC: Democratic Republic of Congo

EAPCC: East African Portland Cement Company

KNBS: Kenya National Bureau of Statistics

MCL: Mombasa Cement Limited

NCL: National Cement Limited

NSE: Nairobi Securities Exchange

RDТ: Resource Dependence Theory

SCL: Savannah Cement Limited

TCT: Transaction Cost Theory

UK: United Kingdom

ABSTRACT

The steady, timely and adequate supply of quality raw materials in the right quantity required for the production process is key to achieving organizational efficiency. Manufacturing organization's overall performance depends heavily on effective management of raw materials. The study sought to establish the perceived influence backward integration has on organizational efficiency in the companies that manufacture cement in Kenya. The study was based on two theories: Resource Dependence Theory (RDT) and Transaction Cost Theory (TCT). Descriptive survey research design was used in this study. The population for this study was the eight cement-manufacturing companies in Kenya. This study adopted the primary method for collecting data through the questionnaire method. The questionnaires were administered using the drop and pick later basis. The study targeted top and middle level managers from eight cement companies as respondents. From each company, questionnaires were administered to quality control, production, finance, marketing and procurement departments and chief executive officers. The collected data were quantitative in nature and thus were analyzed using inferential and descriptive statistics. The study carried out a regression analysis with the study establishing that perceived backward integration strategy was highly adopted by cement manufacturing companies. The perceived influence of backward integration strategy on organizational efficiency was positive and statistically significant. The positive influence implies that improved perceived backward integration leads to improved perceived organizational efficiency of the cement-manufacturing firms. Based on the findings, the study concluded that backward integration strategy was highly adopted by cement manufacturing firms in Kenya. The study further concludes that the perceived influence of backward integration strategy on organizational efficiency was statistically significant. Cement manufacturing firms can thus enhance their efficiency through the adoption of backward integration strategy. Based on the findings, the study recommends that management of manufacturing firms to pursue backward integration strategy aggressively in order to enhance their efficiencies. The firms should integrate with firms on the upstream end of the supply chain from the cement-manufacturing firms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The argument behind this research proposal rests on the notion that Backward Integration Strategy is linked to organizational efficiency which in turn leads to organizational excellence. Kibet, Koyier and Wachira (2017) maintain that backward integration enables organizations to reduce their costs because they are able to access information on supply prices and conditions which in turn leads to the firms' efficient production schedules as well as avoid rent incurred to be on its supplies. Managers and owners of organizations make strategic decisions meant to ensure that they stay competitive in their industry which is instrumental in ensuring their survival, profitability and going concern (Olanrewaju, 2016).

Backward integration strategy has been employed by Bamburi Cement, ARM Africa, Mombasa Cement, National Cement and East African Portland Cement who internally produce and supply their own clinker, the key raw material required in cement production. This in turn reduces the quantities being imported by the firms considerably. Savannah Cement on the other hand is in the process of setting up a clinker factory in Kitui to enable it produce its own clinker instead of importing which has proved to be costly (Ndeti, n.d).

Backward integration strategy has been anchored on the Resource Dependence Theory (RTD) and Transaction Cost Theory (TCT). The RDT is attributed to Pfeffer and Salancik (1978). It holds that organizational survival is greatly attributed to the ability the organization possesses in terms of acquisition, procurement and maintenance of its critical resources required for effective functioning. TCT was initiated by Coase (1937)

in his work, “The Nature of the Firm”. It states that all transactions an organization undertakes have a cost implication attached to it. He came up with mechanisms that will drive managers of the firm in making a decision about whether to produce internally or buy from the market depending on the transaction costs involved. The structure of an organization determines the control it has on transactions which in turn controls costs incurred.

“The cement industry is the building block of a country’s construction industry” (Portland Cement Association, 2013) because almost all construction projects require cement in their execution. Ohimain (2014) maintains that cement production and utilization is related to the prevailing state of the country’s development. Cement demand and consumption was on an upward trend in Kenya until 2017 when it drastically dropped, which was also observed in national development trend. The cement industry in Kenya continue to experience intense competition as well as diverse changes attributed to the entrance of new players into the market leading to the shift in market shares (Simiyu and Rugami, 2018).

1.1.1 Concept of Perception

Perception as a concept can be viewed in different ways by different people. The manner in which one person perceives a given subject may not necessarily be the same as that of another person even-thought there may be similarities in how the matter is viewed by both individuals. The concept of perception has been a subject of immense interest. Many scholars have carried out research on the subject and from them, it has been noted that there has not been a single best-way of looking at the subject matter. Each field has had its own interpretation of perception.

(Wikipedia, 2020) defines perception as the “organization, identification and interpretation of sensory information in order to represent and understand the presented information and environment”. Perception can thus be looked at as the way in which one sees the environment they live in, the situations they come across or the world at large. Robert Efron (1969) on the other hand looks at perception as the primary cognitive contact of man with the surrounding world. Perception therefore is a unique phenomenon to each individual and varies from individual to individual and is dependent on time and prevailing situation (Reitz, 1987).

The researcher thus sought to establish what the managers in the cement manufacturing firms’ perception on the influence backward integration strategy has on organizational efficiency and if indeed the relationship exists, whether it is positive or negative.

1.1.2 Backward Integration Strategy

Backward integration strategy stems from vertical integration strategy where an organization embarks on fulfilling tasks previously done by businesses in the supply chain through merging with or acquiring these businesses, or doing it on their own (Kenton, 2019). An organization may make a decision to invest in processes that enable it to become its own supplier of raw materials required for the production process. Wallstreetmojo.com (2019) defines backward integration as means through which an organization integrates its operations with that of its suppliers with the main purpose of gaining control over suppliers of its raw materials by integrating them with its ongoing business. The Corporate Finance Institute (2019) looks at backward integration as the process through which an organization merges with or acquires another business that supply it with raw materials required in production of its finished product aiming at

cutting costs, increasing revenues and improving production efficiency as well as gaining competitive advantage over its competitors.

Backward integration is considered by the Business Professor, LLC (n.d) as an essential strategy in business operations because when well executed, costs emanating from procurement, production and transportation of raw materials from suppliers can be controlled in a better and efficient manner. This in turn may make a company more competitive leading to improvement of its bottom line. Backward integration enables a company to gain control over the supply chain thus gaining direct access to the required raw materials and in the process achieving efficiency (Kenton, 2019). When this happens, the company can achieve competitiveness over others in the industry.

Zhang (2013) postulates that several organizations have opted to gain better control over supply of raw materials through vertical integration, over their supply chain. Organizations require adequate and timely supply of required raw materials in order to effectively operate in terms of production of goods thus increasing its organizational efficiency. When there are limited suppliers in the external environment for the required raw materials, backward integration strategy may be adopted by the organization to navigate this situation which shall enable the organization avoid delays experienced in terms of supply of raw materials. Apart from the firm having direct access and control of the resources, it also reduces the risks that come with the uncertainty in terms of quality, timely supply and price uncertainties that accompany outsourcing (Kaplan Financial Knowledge Bank, n.d).

1.1.3 Organizational Efficiency

Efficiency is a dynamic concept that has been defined by scholars in different ways. Billyard and Donohue (2015) define efficiency simply as the best output-to-input ratios

and term effectiveness as a companion measure of efficiency. Drucker (2011) defines efficiency as doing things right (in the right way) within an organization and maintains that efficiency is the demonstration of inner fulfilment an organization's planned objectives using available scarce resources whereas Lon (1994) defines efficiency as the degree of the economy in which resources, time and money are consumed. Pinprayong and Siengthai (2012) argue that excellent organizational efficiency contributes towards improved organizational performance with regard to productivity, management, quality as well as profitability.

Robbins (2000) posited that the main measures of the firm's performance are efficiency and effectiveness. On one hand, effectiveness is about achieving the firm's objectives whereas efficiency is inclined towards how the organization will achieve these objectives mostly through reduction of operational costs. He further notes that efficient and effective organizations demonstrate excellent organizational performance and strategic planning.

Bennet (2007) affirms that through efficiency, an organization is able to minimize on cost by using fewer input in the production process. This in turn results into reduced wastage of raw materials, money and streamlined processes while increasing the output as well as reducing errors and defects. Inefficiency can taint an organization's corporate image and reputation which can be unattractive to the potential shareholders and affects customer retention as well.

Allen Consulting Group (2013) confirms that efficiency can be measured by use of labour costs to determine how much it takes to produce a product, cycle time per unit to determine the start and end of the process, que time per unit when serving customers

and delivery timelines. It is vital for companies to be vigilant in ensuring that their key performance indicator is efficiency. This is so because it shall be the basis for attracting more customers and in the process increasing their market share. Efficient organizations are able to comfortably market themselves

1.1.4 Cement Industry in Kenya

Kenya is home to eight cement manufacturing companies. Kenya's mature and well-established cement industry has been recognized as a cement production hub for East Africa serving the local market, North of Tanzania, Uganda, Rwanda DRC and Southern Sudan. Cement manufacturing in Kenya date back to the 1930s when EAPCC then owned by the Blue Circle Industries (UK) was founded.

BCL is Kenya's largest cement producer. It was founded in 1951 but began cement production in 1954 with a cement grinding capacity of 140,000 per annum (Mwangi, 2017). BCL's current grinding capacity is 2.1 million tonnes per annum (The Report: Kenya 2016) with grinding plants in Bamburi and Athi River. BCL produces the "Nguvu Cement" brand. Statistics from KNBS (2018) put BCL as controlling a market share of 32.6%. It also owns shares in EAPCC and is a subsidiary of Hima Cement in Uganda.

EAPCC is considered as Kenya's pioneer in cement manufacturing having been founded in 1933 by Blue Circle Industries. Initially, EAPCC served the local market by importing cement. It began cement production in 1956 in Athi River with a grinding capacity of 60,000 tonnes per year. EAPCC now has an installed grinding capacity of 1.3 million tonnes per annum (The Report: Kenya 2016). EAPCC is associated with the "Blue Triangle Cement" Brand and in 2018, it controlled a market share of 15.1% (KNBS, 2018).

MCL was founded in 2007 in Kenya but began operations in Athi River in 2013 (Indeje, 2017). The company has an installed grinding capacity of 1.6 million tonnes per annum (The Report: Kenya 2016). MCL is the second largest cement manufacturing company in Kenya and controls a market share of 15.8% (KNBS, 2018). It is associated with the “Nyumba Cement” brand.

ARM Africa Limited, previously trading as Athi River Mining was founded by the Paunrama family as a family business in the year 1974 (Mwangi, 2017). It began its operations in Kenya extracting and processing minerals until 1994 when it commenced cement production. ARM is the fifth largest cement manufacturing company in Kenya with an installed grinding capacity of 1.0 million per annum. It is associated with the “Rhino Cement” brand and in 2018 had a market share of 13.5% (KNBS, 2018).

NCL, a subsidiary of Devki Group was founded in 2008 (Mwangi, 2017). It is the sixth largest company with an installed grinding capacity of 1.0m tonnes per annum and produces the “Simba Cement” brand and had a market share of 13% in 2018 (KNBS, 2018).

SCL, the fourth largest cement manufacturer in Kenya began its operations in 2012 in Athi River (Mwangi, 2017). It has an installed cement grinding capacity of 1.5 million tonnes per annum and is associated with the “Savannah Cement” brand. In 2018, it controlled 15% of the market share (KNBS, 2018).

Ndovu and Rai cement companies are the latest entrants into the cement industry. Ndovu cement brand is owned by Karsan Ramji & Sons who have investments in quarry mining. They have put up a cement plant in Athi River with a grinding capacity of 700 tonnes per day. Rai cement began producing cement in Kenya in 2017. It is located in Muhoroni area of Kisumu County. It is owned by the Rai family who have

investment roots in the sugar industry. The Rai cement brand serves primarily the Western and Rift Valley parts of Kenya as indicated by the firm's Marketing Manager, Mr. Suneel Menon (n.d).

The presence of eight cement manufacturing companies in Kenya has led to intensified competition in the cement industry and this has put strain on their already slim profit margins (Simiyu and Rugami, 2018). This has forced the companies to look for ways of ensuring their success and survival in the cement business. Companies able to create a niche for themselves have survived whereas those that haven't have been axed off the market. It is perhaps this competition, coupled with other management issues that have led to the acquisition of ARM Africa by National Cement (Guguyu, 2019).

Rono and Moronge (2015) point out that increased competition in an industry threatens that industry's attractiveness thereby reducing profitability of the industry players. According to Indeje (2017), this has seen the firms which were enjoying the lion's share in the market like BCL, EAPCC and ARM cede their commanding margins to newer firms like NCL, SCL and MCL.

1.2 Research Problem

Steady, timely and adequate supply of quality raw materials in the right quality required for the production process is key to achieving organizational efficiency. Any manufacturing organization's overall performance depends heavily on effective management of raw materials (Akindipe, 2014). Delays in acquisition of raw materials have a negative effect on an organization's finances in terms of costs incurred and customer dissatisfaction in terms of delayed deliveries. It is therefore of utmost importance that a company puts in place effective means of minimizing on supply chain costs in an effort to achieving operational efficiency.

Backward Integration strategy is a subject that has been widely explored in Nigeria because of the many scholars that have undertaken studies on it. Olanrewaju, (2016) affirms that backward integration has been considered as one of the strategies employed by organizations in an effort to gain control in the business industry by increasing its market share. The success of backward integration strategy in Nigeria was further corroborated in October 2017 when Lolu Alade-Akinyemi, the then Procurement Director of Lafarge Nigeria confirmed that harnessing of limestone deposits, one of the raw materials required for cement manufacturing saved the cement industry in Nigeria 240 billion Naira per year (Maduenyi, 2017).

Backward integration strategy is rapidly gaining momentum in Kenya. This may be confirmed by the way major cement companies either already have clinker production in place or are putting measures in place to increase current capacity or commence production of clinker. For instance, in 2016, MCL started construction of two more plants in Vipingo and Kilifi in an effort to increase its clinker production from 3,000 to 9,000 tonnes per day and Savannah Cement in the process of setting up a clinker production plant in Kitui (Ndeta, n.d).

Olanrewaju (2016) carried out a study to find out what effect backward integration has on rural development in Nigeria with special focus on the agriculture sector. The findings of his study were that many manufacturing companies in this sector practiced backward integration by acquiring the source of their raw materials supply. Even though the findings indicated that engagement of these companies in backward integration positively contributed to the general development of the surrounding people and community at large and that the companies were able to increase and have control

over timely supply of the raw materials, it does not clearly confirm that the strategy resulted to improved organizational efficiency.

There are however many studies that have been undertaken on vertical integration strategy. For instance, Oloda (2017) undertook a study on the impact of vertical integration strategy on organizational survival of manufacturing firms in Port Harcourt in Nigeria. The population sample of 205 managers from six selected companies using primary and secondary data collection methods and analyzed the collected data using the Spearman Rank-Order Correlation coefficient. The findings confirmed that indeed, a positive relationship existed between vertical (both backward and forward) integration and organizational survival. The study further confirmed that corporate performance of the vertically integrated firms was better than that of the non-vertically integrated firms. It is not however clear why the researcher chose to use both primary and secondary methods to collect data when the primary method through questionnaire would have been sufficient.

Njuguna, Kwasira and Orwa (2018) undertook a study on “the influence of vertical integration strategy performance of non-financial firms listed at the Nairobi Securities Exchange in Kenya”. The population of study were all 45 non-financial companies listed at NSE. Data was collected through primary (semi-structured questionnaire) and secondary (audited financial statements) methods. They used the descriptive, regression and correlation methods to analyze the collected data. The findings from this study were that use of vertical integration strategy plays a role in reducing costs of transaction, increase of market power and improvement of the organizations’ technical efficiencies. As much as this study was conclusive, there is need to narrow down to the cement industry and undertake similar studies to ascertain concurrence in the findings.

Gitonga (2011) undertook a study to ascertain the relationship vertical integration has on performance of construction firms in Kenya. The population of study was sixty construction firms registered under Class A with the Ministry of Works in 2009. The researcher collected data by use of primary (using structured questionnaire) and secondary methods. He analyzed the collected data using the descriptive, regression and correlation analysis methods. The findings of this study were that vertical integration had no relationship with performance of construction firms in Kenya and that transaction costs in the construction industry do not have any significance influence in the firms' performance. However, it was observed that over 50% of the respondents did not return duly completed questionnaires and this sheds some doubt on the credibility of the findings. This then creates a gap and opens a window for further research to be undertaken to clear any inconsistencies.

The gap identified in lack of adequate research in this field is the driving force and motivation for the choice of research leading to the research question: Does backward integration affect organizational efficiency in the cement industry in Kenya?

1.3 Research Objective

The objective of this study was to establish the perceived influence backward integration has on organizational efficiency in cement industry in Kenya.

1.4 Value of the Study

Findings from this research is expected to be of significance to several stakeholders. These consist of management of relevant organizations, the academia, researchers and government policy makers.

The study findings will equip the management of these companies and in other industries with the relevant knowledge and know-how in understanding the factors they ought to consider when embarking on backward integration strategy in order to achieve maximum benefits from implementation of this strategy.

The cement industry is key in construction activities within any country and by extension contributes immensely towards the country's economic development. It is therefore vital that the relevant government policy makers understand and formulate policies that contribute a positive growth of these companies.

In academia, the study will be valuable to future scholars and academic researchers in the field interested in strategy of backward integration to further explore on how firms can greatly gain from use of this strategy. This study shall be a source of knowledge contribution to all stakeholders as well as form the basis for other researchers to further develop their studies and expand their research to other industries.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focussed on the critical review of existing literature with respect to the research problem. The main sections covered in this chapter included theoretical foundation which focuses on various schools of thoughts that sought to shed more light on the subject matter of how Backward Integration influences Organizational Efficiency.

2.2 Theoretical Foundation

This section looked at various schools of thought used to guide the study the perceived influence backward integration has on organizational efficiency. The study was guided by two theories: Resource Dependence Theory (RDT) and Transaction Cost Theory (TCT)

2.2.1 Resource Dependence Theory

The guiding principle of this Theory is that there must be an engagement in transaction between an organization and other organizations within its environment for acquisition of resources. Even though these transactions are beneficial, they often lead to dependencies. Organizations depend on the environment for supply of the required resources for production of their goods (Child, 1972). Due to unpredictability and instability of the external environment, required resources may sometimes be scarce and not readily available. This situation generates power dependence relationships between these organizations (Ulrich and Barney, 1984). Interdependencies coupled with uncertainties in the external environment results into a situation where survival of the organization and its continued success also becomes uncertain.

Walter and Barney (1990) reiterate that it is the managers' responsibility to learn to navigate these situations by coining tactics and strategies of dealing with these dependencies to secure ample access to required resources to minimize disruptions in their operations. The strategies to be employed vary depending on the nature of the business. It is therefore of utmost importance for managers to employ the least constraining mechanism to manage relationships and partner with firms that offer minimal dependence and uncertainty at the same time maximizing their autonomy.

RDT deals with the impact resource acquisition has on organizational behavior more so the ability of the firm to gather and exploit resources faster than its competitors. Pfeffer and Salancik (1978) state that organizational survival is attributed to the ability of an organization to acquire, procure and maintain its required critical resources for its effective functioning. The theory lays emphasis on the vital role resources play as key to a firm's survival and that successful access and control of its critical resources becomes a basis of power.

Ulrich & Barney (1981) reiterate that organizations should be able to control necessary resources required for their survival. Resource dependency analysis begins with identifying an organization's critical and required resources, then tracing them to their sources. According to (Hillman et al, 2009) firms use this Theory to make key strategic decisions within an organization.

2.2.2 Transaction Cost Theory

This theory traces its roots to Coase (1937) through his work "The Nature of the Firm". He noted that there exists transaction costs in using the market when obtaining goods or services. These costs include sourcing and information costs, negotiation/bargaining costs, confidentiality costs, transportation costs, taxation costs, policing and

enforcement costs and dispute resolution costs. All these costs increase the costs of procuring from the market. He further affirms that organizations explore the option of internal production to avoid these costs.

Transaction costs deal with consideration of all costs incurred during outsourcing of product production which enables an organization to make a decision of whether to buy or make the product (www.businessdictionary.com). Every activity involving purchase or supply from the market has a cost implication attached to it. It is the responsibility of the organizational management to compare the cost of transactions vis a vis the costs to be incurred when production is done within the organization and this enables them to make a strategic decision on the strategy the organization will follow.

The cement manufacturing is highly competitive industry. With the ever-increasing production and operational costs, unstable and highly unpredictable access to raw materials and dwindling profits, companies are adopting strategies to enable them survive and remain relevant in the industry (Njuguna, et al, 2018). Companies have thus opted to adopt generic strategies with integration, more so backward integration being the most commonly adopted strategy.

2.3 Backward Integration and Organizational Efficiency

One of the reasons why firms undertake backward integration, according to the Corporate Finance Institute (n.d), is to enable them to achieve efficiency in their production and operational processes.

Buzzel, (1983) believes that there is improved coordination and efficiency of production and scheduling activities if there exists a firm and certain commitment between an organization and its downstream supplier. This in turn leads to cost

reductions as well as efficiency in operations. Zhang (2013) categorically states that no matter which direction the organization decides to integrate, the chosen strategy will influence the firm's performance. He further states that the organization's business strategy influences the type of integration the firm uses.

Decker (2019) argues that backward integration enables organizations to secure steady supply of raw materials and keep costs associated with external supply under control thus dealing with the problem of price uncertainty within the market. Timely supply of quality raw materials required for production leads to efficiency in the production process. In-house production and supply of raw materials is also seen as a way through which an organization is able to program production and supply of its required input. This helps in minimizing on delays the firm may experience when depending on external suppliers which in turn affects operational and production efficiency within an organization.

Jurevicus (2013) affirms that if backward integration is well executed, it could lead to reduced costs of raw materials due to elimination of transaction costs as well as guaranteed quality and steady supply of raw materials which can catapult the organization to secure an increased market share. Porter (1979) suggests that one of the strategies that can be used to deal with the problem of powerful suppliers is backward integration which he terms as key to organizational growth and survival which cushions the organization against vulnerability from suppliers.

2.4 Empirical Studies and Knowledge Gaps

Backward Integration strategy is a subject that has been widely explored in Nigeria because of the many scholars that have undertaken studies on it. Olanrewaju, (2016) affirms that backward integration has been considered as one of the strategies employed by organizations in an effort to gain control in the business industry by increasing its market share. The success of backward integration strategy in Nigeria was further corroborated in October 2017 when Lolu Alade-Akinyemi, the then Procurement Director of Lafarge Nigeria confirmed that harnessing of limestone deposits, one of the raw materials required for cement manufacturing saved the cement industry in Nigeria 240 billion Naira per year (Maduenyi, 2017).

Olanrewaju (2016) carried out a study to find out what effect backward integration has on rural development in Nigeria with special focus on the agriculture sector. The findings of his study were that many manufacturing companies in this sector practiced backward integration by acquiring the source of their raw materials supply. Even though the findings indicated that engagement of these companies in backward integration positively contributed to the general development of the surrounding people and community at large and that the companies were able to increase and have control over timely supply of the raw materials, it does not clearly confirm that the strategy resulted to improved organizational efficiency.

There are however many studies that have been undertaken on vertical integration strategy. For instance, Oloda (2017) undertook a study on the impact of vertical integration strategy on organizational survival of manufacturing firms in Port Harcourt in Nigeria. The population sample of 205 managers from six selected companies using primary and secondary data collection methods and analyzed the collected data using

the Spearman Rank-Order Correlation coefficient. The findings confirmed that indeed, a positive relationship existed between vertical (both backward and forward) integration and organizational survival. The study further confirmed that corporate performance of the vertically integrated firms was better than that of the non-vertically integrated firms. It is not however clear why the researcher chose to use both primary and secondary methods to collect data when the primary method through questionnaire would have been sufficient.

Njuguna, Kwasira and Orwa (2018) undertook a study on “the influence of vertical integration strategy performance of non-financial firms listed at the Nairobi Securities Exchange in Kenya”. The population of study were all 45 non-financial companies listed at NSE. They collected data using primary (semi structured questionnaire) and secondary (audited financial statements) methods. They used the descriptive, regression and correlation methods to analyze the collected data. The findings from this study were that use of vertical integration strategy plays a role in reducing costs of transaction, increase of market power and improvement of the organizations’ technical efficiencies. As much as this study was conclusive, there was need to venture into the manufacturing industry and narrow down to the cement industry and undertake similar studies to ascertain concurrence in the findings.

Gitonga (2011) undertook a study to ascertain the relationship vertical integration has on performance of construction firms in Kenya. The population of study was sixty construction firms registered under Class A with the Ministry of Works in 2009. The researcher collected data by use of primary (using structured questionnaire) and secondary methods. He analyzed the collected data using the descriptive, regression and correlation methods. The findings of this study were that vertical integration had

no relationship with performance of construction firms in Kenya and that transaction costs in the construction industry do not have any significance influence in the firms' performance. However, it was observed that over 50% of the respondents did not return duly completed questionnaires and this sheds some doubt on the credibility of the findings. This then creates a gap and opens a window for further research to be undertaken to clear any inconsistencies that may have arisen from this study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The key objective of this research was to ascertain if indeed backward integration has an influence on organizational efficiency. This chapter did outline the methodological approach employed in undertaking the study. Its focus was on the research design, study population, data collection methods and how the collected data was analyzed.

3.2 Research Design

A Research design is a plan that shall clearly demonstrate how a researcher proposes to undertake the various activities of the study with the main purpose of satisfying the objectives of the research. The study adopted the descriptive survey research design through the census method. According to Cooper and Schindler (2014), the descriptive survey method is used in measuring the cause-effects relationship among variables and enables a researcher to collect in-depth data about the study population. Because of the existence of few cement companies in Kenya, data was collected from all the manufacturing companies and therefore, the census survey method was ideal for this study.

3.3 Population of Study

Population for this study was drawn from all the eight cement-manufacturing companies in Kenya. Cooper and Schindler (2014) look at population as the whole component of the elements with common characteristics that the researcher can observe and plans to study. The vital aspect of the population is that it can be enumerated and used to select the sample (Adams, Khan, Raeside & White, 2007). The study adopted census survey where all eight cement-manufacturing firms formed part of the

population. A census is a complete enumeration of all items in the population. Census has the advantage over sampling as the highest accuracy is obtained and no element of chance is left (Kothari, 2004). According to Kothari (2004), when the population is a small one, it is no use resorting to a sample survey hence it becomes necessary to include all elements in the population just like in the current study where there were only eight (8) cement manufacturing companies.

3.4 Data Collection

Data collection is key and critical in achievement of a successful research. Cooper and Schindler (2014) describe data collection as gathering of data for purposes of conducting its analysis with the aim of coming up with inferences. This study adopted the primary method as an exclusive way for collecting data through the questionnaire method as indicated under Appendix II of this document. A questionnaire is defined by McLeod (2018) as “a research instrument consisting of a series of questions for the purpose of gathering data from respondents”. A well designed and structured questionnaire is vital to the success of any research.

A semi structured questionnaire was used in this study. It was designed in three sections adopting a simple structure which facilitated for easy and faster response by the respondents. This was the preferred method in that it enabled respondents to fill in the questionnaires at their own pace. The questionnaires were administered using the e-questionnaire method where respondents were required to participate through their google accounts.

The study targeted six (6) top and middle level managers from the eight cement companies as respondents. From each company, the questionnaires were administered

to Quality Control, Production, Finance, Sales & Marketing and Procurement Departments as well as the executive forming a total sample size of 48 respondents.

3.5 Data Analysis

Data analysis is perceived as the most crucial part of research. It involves summarizing and interpreting the collected information with a view of determining patterns, relationships or trends geared towards answering the raised research question. The collected data were quantitative in nature and thus analysed using the descriptive method as well as inferential statistics using the regression method. Adams, Khan, Raeside and White (2007) affirm that regression is aligned with determining the relationship between variables. Since this research aimed at finding out the relationship between backward integration and organizational efficiency, it was an ideal method for analyzing the collected data.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter presents the data analysis and discussion based on findings. The study sought to establish the influence backward integration strategy has on organizational efficiency in cement manufacturing firms in Kenya. The analysis proceeded with determination of the response rate and reliability of the questionnaire items used in the study.

4.1.1 Response Rate

The researcher issued 48 questionnaires to the heads of departments in the eight cement manufacturing firms in Kenya. Questionnaires were to be filled by management staff in the position of Quality Control, Production, Finance, Sales and Marketing, Production, Procurement and Administration. The questionnaires returned were thirty nine (39). The questionnaire return rate was 81.25%, which was considered adequate for further analysis. The researcher was able to achieve a higher response rate through making follow up with respondents through phone calls and emails. The respondents were also assured of the confidential nature by which the data collected would be handled. The findings are as presented in table 4.1.

Table 4. 1: Response Rate

Questionnaires	Frequency	Percentage (%)
Returned	39	81.25
Not returned	9	18.75
Total	48	100.00

Source: Researcher (2020)

4.1.2 Reliability Test

The study also examined the reliability of the questionnaire used in the study. Reliability is the quality of the data collection instrument, questionnaires in this case, to measure what it is expected to measure consistently. It is the ability of the questionnaire to give consistent results when a repeat study is carried out with same sample (Kothari, 2004). The study adopted internal consistency measure of reliability where Cronbach Alpha was calculated. A Cronbach alpha equal or greater than 0.7 is considered reliable enough. The study established that all the variables were reliable given that backward integration strategy has a Cronbach alpha of 0.747 and organizational efficiency had Cronbach alpha of 0.741. Table 4.2 presented the reliability results.

Table 4. 2: Cronbach Alpha

Variable	Cronbach Alpha	No of items	Conclusion
Perceived Backward Integration Strategy	0.747	9	Reliable
Perceived Operational Efficiency	0.741	10	Reliable

Source: Researcher (2020)

4.2 Demographic Information

Demographic information relates to the population characteristic factors of respondents in the study. The study examined the respondents' demographics in three areas: department of respondent, duration of respondent in company and duration of respondent in current employment position.

4.2.1 Department of Respondent

The study established that 6 (15.4%) respondents were in executive position, 4 (10.3%) were from finance, 7 (17.9%) were from marketing, 4 (10.3%) were from procurement,

12 (30.8%) were from production and 6 (15.4%) were from quality control. The findings revealed that majority of the respondents were from production, the department actively involved in ensuring operational efficiency of the respective firms.

4.2.2 Duration of Respondent in Company

Majority of the respondents (84.6%) had stayed in the firms between 6-15 years. This was followed by 10.3% of the respondents who had stayed for less than 5 years and finally 5.1% of the respondents who had been in respective firms for more than 15 years. Given that majority of the respondents had stayed with respective firms for between 6-15 years, it can be concluded that they are very experienced in issues of backward integration and organizational efficiency in their respective firms.

4.2.3 Duration of Respondent in Current Position

Finally, the study sought to determine the experience level of the employees in the positions they were occupying. The study concluded that majority (53.8%) of the respondents were occupying the positions they were in for less than 5 years implying that they were relatively experienced. Forty three decimal six percent (43.6%) of the respondents had experience level of between 6-10 years in their respective positions. Only about 2% of the respondents had stayed in their respective positions for more than 11 years. The study thus concluded that the firm had a mix of experiences with relevant skills necessary to ensure the firms implemented backward integration strategy in an effort to enhance organizational efficiency. The findings are portrayed in table 4.3

Table 4. 3: Demographic Characteristics

Variable	Category	Frequency	Percent
Department	Executive	6	15.4
	Finance	4	10.2
	Marketing	7	17.9
	Procurement	4	10.3
	Production	12	30.8
	Quality	6	15.4
	Total	39	100.0
Duration of stay in the firm	less than 5 years	4	10.3
	6-10 years	20	51.3
	11-15 years	13	33.3
	over 15 years	2	5.1
	Total	39	100.0
Duration of stay in the position	less than 5 years	21	53.8
	6-10 years	17	43.6
	11-15 years	1	2.6
	Total	39	100.0

Source: Researcher (2020)

4.3 Descriptive Analysis of Study Variables

Descriptive analysis emanates from descriptive statistics. Descriptive statistics is a category of statistical tool that aids in establishing the general attributes of the population in terms of central tendency and dispersion measures. The study adopted mean and standard deviation to capture descriptive statistics. The descriptive analysis are organized in terms of study variables.

4.3.1 Perceived Backward Integration Strategy

Backward integration strategy stems from vertical integration strategy where an organization embarks on fulfilling tasks previously done by businesses in the supply chain through merging with or acquiring these businesses, or doing it on their own (Kenton, 2019). The study used a 5-point Likert scale to measure the perception of the

respondents regarding the state of backward integration in their respective firms. The study findings are presented in Table 4.4.

The response to the statement that the firms procure clinker using more than one source was supported with majority of respondents agreeing to a large extent that their firms were using more sources of clinker as depicted by a mean and standard deviation of (M=4.00 and SD= 1). The response to the statement that the firms have adequate monthly supply of clinker was supported by majority of respondents as depicted by a mean (M=4.0769) and Standard deviation (SD=.73930).

Concerning the statement on direct control over delivery of clinker, majority of the respondents were positive implying that they have integrated with transport companies. This was evidenced by mean response and standard deviation agreement to large extent (M=4.0256 and SD=1.08790). The study also revealed that the firms have some level of control over the price of clinker as shown by a mean response and standard deviation to moderate extent (M=3.5385 and SD= 1.23216).

The statement on experience of minimal interruptions in their production process, the response as shown by mean response and standard deviation of agreement to moderate extent (M=3.7692 and SD=1.11122). Concerning the statement on the firms' direct control over the quality of clinker, the study revealed existence of better control as evidenced by mean response and standard deviation of agreement to a large extent (M=4.1538 and SD= .96077).

The study further sought to establish the level of product differentiation. Majority of respondents revealed that their products are differentiated from those of the competitors as depicted by mean response (M= 4.4103) and standard deviation (SD= .75107) of agreement to a large extent.

Regarding the statement on the firm's increased market share in the last 5 years, the respondents were of the opinion that their market shares had not changed much as depicted by mean (M= 3.7692) and standard deviation (SD=1.20222) of agreement to a moderate agreement. This implies that there is stiff competition in the Kenyan market for cement product.

Majority of respondents supported the statement that the firms have control over the transaction costs with the mean response of (M= 3.94) of agreement to a moderate extent. The Overall mean score and standard deviation for the statements about backwards integration strategy showed agreement to a moderate extent (M= 3.9658 and SD=1.009254). This implies that majority of cement manufacturing firms in Kenya have implemented backward integration strategy in an effort to enhance organizational efficiencies.

Table 4. 4: Perception on Backward Integration Strategy

Statements	Mean	Std. Devi.
We procure our clinker using more than one source	4.0000	1.00000
We have adequate monthly adequate supply of clinker	4.0769	.73930
We have direct control over the delivery of our clinker	4.0256	1.08790
We have direct control over the price of our clinker	3.5385	1.23216
We experience interruptions in our production process	3.7692	1.11122
We directly control the quality of our clinker	4.1538	.96077
Our products are differentiated from our competitors	4.4103	.75107
We have increased our market share in the last 5 years	3.7692	1.20222
We have control over the transaction costs	3.9487	.99865
Overall Mean Score	3.9658	1.009254

Source: Researcher (2020)

4.3.2 Perceived Organizational Efficiency

Billyard and Donohue (2015) defined efficiency simply as the best output-to-input ratios and term effectiveness as a companion measure of efficiency. The study sought to establish the level of organizational efficiency in cement manufacturing firms in Kenya. The study adopted 5-point Likert scale where 1 is not at all, 2 is to a small extent, 3 is to large extent, 4 is to a large extent and 5 is to a very large extent. The findings are presented in Table 4.5.

The statement that the firms have reduced costs from procurement of clinker was fairly supported with most responds agreeing to a moderate extent. This was evidenced by mean and standard deviation ($M=3.7949$ and $SD=1.15119$). Regarding the statement that the firms have uninterrupted production processes, the study revealed that the production process was not interrupted much as shown by mean and standard deviation of agreement to moderate extent ($M=3.6667$ and $SD=.86855$).

The study also established that respective cement manufacturing firms had greatly reduced wastage of raw materials as shown by responses tilting towards agreement to a large extent ($M= 4.1026$ and $SD= .85208$). The statement that the respective cement manufacturing firms had increased their production output was supported by most respondents to a large extent ($M= 4.1282$ and $SD = 1.00471$).

The respondents also revealed that their firms have low labour costs which could only mean the firms have adopted technology to replace labour. The finding is supported by mean response ($M=4.0513$) and standard deviation ($SD=.85682$) of agreement to a large extent. The respondents further revealed that their respective firms have low levels in product errors and defects as depicted by the mean response and standard deviation to a large extent ($M=4.2821$ and $SD=.72361$).

Regarding the statement that the firms have high quality issues of products, the respondents agreed to a moderate extent (M=3.4615 and SD= 1.44816). The study then sought to establish whether the firms have a backlog in customer delivery timeliness. The study revealed that customer backlog is there in a small percentage as shown by mean response and standard of agreement to a moderate extent (M= 3.3846 and SD =1.33012).

The statement that firms have reduced the cycle time per unit was supported by majority of the respondents are depicted by mean and standard deviation of agreement to large extent (M=4.0769 and SD=.80735). The study also established that the firms have low cost per unit output as shown by mean of 3.8462 and standard deviation of 1.13644. The overall mean score for statements regarding organizational efficiency was 3.7795 which was agreement to moderate extent with statements about organizational efficiency in the cement-manufacturing firms in Kenya.

Table 4. 5: Perception on Organizational Efficiency

Statements	Mean	Std. Deviation
We have reduced costs from procurement of clinker	3.7949	1.15119
We have uninterrupted production processes	3.6667	.86855
We have greatly reduced wastage of raw materials	4.1026	.85208
We have increased our production (output)	4.1282	1.00471
We have low labour costs	4.0513	.85682
We have low levels in product errors and defects	4.2821	.72361
We have high quality issues of products	3.4615	1.44816
We have a backlog in customer delivery timeliness	3.3846	1.33012
We have reduced the cycle time per unit	4.0769	.80735
We have a high cost per unit output	2.8462	1.13644
Overall Mean score	3.7795	1.017903

Source: Researcher (2020)

4.4 Correlation Analysis

The study sought to establish the relationship between the study variables. The study adopted the Pearson correlation analysis to establish the relationship between backward integration strategy and organizational efficiency. The findings were presented in Table 4.6. The correlations between Perceived backwards integration strategy and perceived organizational efficiency was positive and strong ($r = .765$, $P\text{-value} = .000 < 0.01$). The positive correlation implies that indeed, there exists a positive relationship between perceived backward integration and perceived organizational efficiency.

Table 4. 6: Bivariate Pearson Correlation

		Perceived Backward Integration Strategy	Perceived Organizational Efficiency
Perceived Backward Integration Strategy	Pearson Correlation	1	.765**
	Sig. (1-tailed)		.000
	N	39	39
Perceived Organizational efficiency	Pearson Correlation	.765**	1
	Sig. (1-tailed)	.000	
	N	39	39

** . Correlation is significant at the 0.01 level (1-tailed).

Source: Researcher (2020)

4.5 Regression Analysis

The research sought to establish the influence backward integration strategy has on organizational efficiency in cement manufacturing firms in Kenya. The study adopted univariate Ordinary Least Squares (OLS) regression model to examine the influence backwards integration strategy has on organizational efficiency. The findings as presented in table 4.7, 4.8 and 4.9. Table 4.7 presents the model summary of the study.

The model summary reveals that the coefficient of determination (R^2) was .585 implying that perceived backward integration strategy in cement manufacturing firms explained 58.5 % of the variation in perceived organization efficiency with the remaining unobserved variables not covered by this study explaining 41.5% of the variation in organizational efficiency.

Table 4. 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.765 ^a	.585	.573	.37314

a. Predictors: (Constant), Perceived Backward Integration Strategy

Source: Researcher (2020)

Table 4.8 presents the analysis of variances (ANOVA). The study revealed that the calculated significance was lower than 0.05 level of significance implying that perceived backward integration has a significant influence on perceived organizational efficiency ($F=52.085$, $P\text{-value} = .000 < .05$).

Table 4. 8: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.252	1	7.252	52.085	.000 ^b
	Residual	5.152	37	.139		
	Total	12.404	38			

a. Dependent Variable: Perceived Organizational efficiency

b. Predictors: (Constant), Perceived Backward integration strategy

Source: Researcher (2020)

Table 4.9 presents the regression coefficients. The intercept term ($\beta_0=.933$) implies that organizational efficiency was .933 when backwards integration was held constant at zero. The study established that perceived backward integration strategy was highly

adopted by cement manufacturing companies. The influence of perceived backward integration strategy on perceived organizational efficiency was positive and statistically significant ($\beta_1 = .743$, $t=7.217$, $p= 0.00<.05$). The positive influence implies that improvement in perceived backward integration by one-unit leads to improved perceived organizational efficiency of cement-manufacturing firms by 0.743 units.

Table 4. 9: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.933	.413		2.262	.030
	Perceived Backward integration strategy	.743	.103	.765	7.217	.000

a. Dependent Variable: Perception on organizational efficiency

4.6 Discussion of findings

The study has examined relationship between perceived backward integration strategy on perceived organizational efficiency in the cement industry in Kenya. The correlation analysis revealed that the correlations between perceived backwards integration strategy and perceived organizational efficiency was positive and strong ($r= .765$, $P\text{-value} = .000 < 0.01$). The positive correlation implies that there was a relationship between perceived backward integration and perceived organizational efficiency. These finding is in agreement with Jurevicus (2013) who stated that if backward integration is well executed, it could lead to reduced costs of raw materials due to elimination of transaction costs leading to increased organizational efficiency. Additionally, Olanrewaju (2016) indicated that engagement of companies in backward integration positively contributed to the general development of the surrounding people and community at large and that the companies were able to increase and have control over timely supply of the raw materials. The findings is in agreement with empirical literature given that they share context that was manufacturing environment.

The study has examined the influence of perception on backward integration strategy on perception on organizational efficiency in the cement industry in Kenya. The study adopted simple regression with the ANOVA revealing that perceived backward integration has a significant influence on perceived organization efficiency ($F=52.085$, $P\text{-value} = .000 < .05$). The study findings agree with Oloda (2017) who confirmed that a significant relationship existed between vertical (both backward and forward) integration and organizational survival. The study further confirmed that corporate performance of the vertically integrated firms was better than that of the non-vertically integrated firms. The findings agree with Olada (2017) given that both studies adopted descriptive survey design and were carried out in manufacturing context.

Finally, regression coefficient showed that the intercept term was ($\beta_0=.933$) implying that perceived organizational efficiency was .933 when perceived backwards integration was held constant at zero. Further the study established that the influence of perceived backward integration strategy on perceived organizational efficiency was positive and statistically significant ($\beta_1 =.743$, $t=7.217$, $p= 0.00 < .05$). The positive influence implies that an improvement in perceived backward integration by one unit influences perceived organizational efficiency of the cement manufacturing firms by 0.743 units. The research findings are in congruence with Decker (2019) who argues that backward integration enables organizations to secure steady supply of raw materials and keep costs associated with external supply under control thus dealing with the problem of price uncertainty within the market. Timely supply of quality raw materials required for production leads to efficiency in the production process. The positive influence can be explained by the reduction in transactions costs incurred by cement manufacturing firms during the ordering process from their suppliers.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter expounds on the summary of the key findings, conclusion of the study based on research findings, recommendations of the study, limitations of the study and suggested areas of further study.

5.2 Summary of findings

The objective of the study was to establish the influence of perceived backward integration on perceived organizational efficiency of cement manufacturing firms in Kenya. Here, the descriptive analysis confirmed that the overall mean score and standard deviation for the statements about backward integration strategy showed agreement a large extent. This implies that majority of employees at cement manufacturing firms Kenya perceived that backwards integration strategy was implemented to enhance their organizational efficiencies. In addition, the overall mean score for statements regarding perceived organizational efficiency was moderate. The findings imply that cement manufacturing firms in Kenya had experienced moderate organizational efficiency.

The correlation analysis showed that the relationship between perceived backward integration strategy and perceived organizational efficiency was positive and strong. The positive correlation implies there was a relationship between perceived backward integration and perceived organizational efficiency. Regression analysis was also carried out with findings establishing that perceived backward integration strategy was highly adopted by cement manufacturing companies. The influence of perceived

backward integration strategy on perceived organizational efficiency was positive and statistically significant. The positive influence implies that improved perception on backward integration leads to improved perception on organizational efficiency within the cement-manufacturing firms.

5.3 Conclusion

On the basis of this research findings, it is the conclusion of the study that perceived backward integration strategy was highly adopted by cement manufacturing firms in Kenya as evidenced by mean responses of agreement to a large extent. Further, the study concludes that the perceived influence of backward integration strategy on organizational efficiency was statistically significant. The cement-manufacturing firms can thus enhance their perceived efficiency through the adoption of backward integration strategy. This could be achieved through collaboration, acquisition, or merger with firms on the back stream end of the supply chain for cement manufacturing firms.

5.4 Recommendation

Based on the findings that backward integration strategy is perceived to have significant influence on organizational efficiency among cement manufacturing firms, the study recommends that managers of cement firms aggressively pursue backward integration strategy in order to enhance efficiency in their operations. The firms should integrate with firms on the upstream end of the supply chain from the cement-manufacturing firms. The firms in the upstream end includes limestone and clinker suppliers. The limestone and clinker acts as the raw materials in the manufacturing of cement. The firms in the upstream of cement manufacturing firms are the mining and exploration

firm that extract the limestone and clinker from the rocks. The integration could be achieved through acquisition, merger and strategic alliance.

5.5 Study Implications

5.5.1 Theoretical Implications

The study has implications for theory. The study findings has shown that backwards integration has a positive significant influence on organizational efficiency. The findings is critical for theory building by extending the breadth of knowledge regarding theoretical relationship between of backward integration and organizational efficiency among cement manufacturing firms. Further, the study extends the application of resource dependency theory in studying the relationship between backward integration and organizational efficiency in the cement manufacturing set up. The study reveals cement-manufacturing firm can resource dependency theory identifying an organization's critical and required resources, then tracing them to their sources.

5.5.2 Practical Implications

The study will have practical implications for managers and policy makers. The study is critical for managers of cement manufacturing firms regarding decisions and strategy formulation. The positive influence of backward integration on organizational efficiency of cement manufacturing firms shows that management of cement firms ought to consider backward integration as a strategy to achieve efficiency. Backwards integration is useful for managers of cement manufacturing firms when looking for strategies for combating stiff competition and improving their efficiency. The management of cement-manufacturing firms can integrate with limestone and clinker mining firms.

The study is also critical for policy purposes. Regulators of cement-manufacturing firms including the ministry of minerals and mining who will find the study findings useful. The study findings provides an insight to ministry of minerals and mining on ways of enhancing operational efficiency of cement-manufacturing firms. Based on study finding, the ministry should advise cement-manufacturing firms to consider backward integration to enhance their efficiency. The Kenyan Association of Manufacturers (KAM) should also find this study insightful when organising conferences and seminars targeting their members. The Kenyan Association of Manufacturers should advise their members to adopt business integration strategy especially the backwards integration with their suppliers in an effort to improve their organizational efficiency.

5.6 Limitation of the study

The current study was limited to the cement manufacturing firms in Kenya hence the results have limited application in the cement-manufacturing firms. The results may not be applicable in other manufacturing and non-manufacturing firms. The study heavily relied on primary data collected via questionnaires thus may not sufficiently capture aspects on organizational efficiency that are best captured using secondary data. Furthermore, the study was limited to one independent variable, the perceived backward integration strategy and this may not fully explain variation in organizational efficiency.

5.7 Areas for Further Studies

Even though the study was successfully carried out, certain gaps exist for future researchers to take advantage of. First, given that the current study was limited to

cement-manufacturing firms, the results are inclined in this area and may not be applicable in other manufacturing and non-manufacturing firms. The study thus recommends that future researchers undertake a similar study in the context of other manufacturing and in non-manufacturing firms to enhance the applicability of findings across these firms.

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APPENDICES

Appendix I: List of Cement Manufacturing Companies in Kenya

1. ARM Africa Limited
2. Bamburi Cement Limited
3. East African Portland Cement Company Limited
4. Mombasa Cement Limited
5. National Cement Limited
6. Ndovu Cement Limited
7. Savannah Cement Limited
8. Rai Cement Limited

Appendix II: Research Questionnaire

The information given on this questionnaire will be held with the strictest confidence and used primarily for this research.

Section A: General Information

Please respond by filling in the blanks where space has been provided or by ticking [√] against the most appropriate response.

1. How long has the Company been in operation in Kenya?

- 0-5 years 6-10 years 11-15 years Over 15 years

2. Department of Respondent (Please tick [√] one):

- Executive Procurement Production
 Marketing Quality Finance

3. Position held by Respondent

4. Duration of Respondent in the Company

- 0-5 years 6-10 years 11-15 years Over 15 years

5. Duration of Respondent in current position

- 0-5 years 6-10 years 11-15 years Over 15 years

Section B: Backward Integration

6. To what extent does the Company agree with the following statements?

(Please respond by ticking [√] accordingly on the scale of 1 and 5 where

- 1 Not at all 2 To a small extent 3 To a moderate extent
4 To a large extent 5 To a very large extent

	1	2	3	4	5
We procure our clinker using more than one source					
We have adequate monthly adequate supply of clinker					
We have direct control over the delivery of our clinker					
We have direct control over the price of our clinker					
We experience interruptions in our production process					
We directly control the quality of our clinker					
Our products are differentiated from our competitors					
We have increased our market share in the last 5 years					
We have control over the transaction costs					

Section C: Organizational Efficiency

7. To what extent has your organization experienced the following?

(Please respond by ticking [√] accordingly on the scale of 1 and 5 where

- 1 Not at all 2 To a small extent 3 To a moderate extent
4 To a large extent 5 To a very large extent

	1	2	3	4	5
We have reduced costs from procurement of clinker					
We have uninterrupted production processes					
We have greatly reduced wastage of raw materials					
We have increased our production (output)					
We have low labour costs					
We have low levels in product errors and defects					
We have high quality issues of products					
We have a backlog in customer delivery timeliness					
We have reduced the cycle time per unit					
We have a high cost per unit output					

Thank you for participating in this Research

Appendix III: Research Letter



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DATE:

TO WHOM IT MAY CONCERN

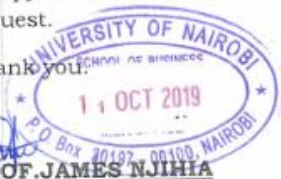
The bearer of this letter, MUSUNGU WASSIMU MUMSILLAH of Registration Number DBI/5318/2017..... is a Master of Business Administration (MBA) student of the University of Nairobi.

He/she is required to submit as part of his/her coursework assessment a research project report

We would, therefore, appreciate if you assist him/her by allowing him/her to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.


to [Signature]
PROF. JAMES NJIHIA
DEAN, SCHOOL OF BUSINESS