

**EFFECT OF OPERATIONS IMPROVEMENT PRACTICES ON  
ORGANIZATIONAL COMPETITIVENESS IN  
TELECOMMUNICATION INDUSTRY IN KENYA**

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## DECLARATION

I declare that this research project is my original work and it has not been presented in any other institution or university for academic credit.

Signed.....

Date.....

**JACKLINE JUSA OKELLOH**

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This research project is surrendered for consideration with endorsement as the University Supervisor

Signed.....

Date.....

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## **DEDICATION**

This project is dedicated to my parents and my daughter Jessie, who without their constant encouragement, splendid example and utter belief in me, this and many other of life projects would not have even started. Thank you for your faith in me, your providence and the sense of direction that you readily give.

## **ACKNOWLEDGEMENT**

I wish to acknowledge the University of Nairobi and especially my lecturers in management science, for giving me this opportunity to better myself academically. Special thanks go to my supervisor Mr. Ondiek, without whose guidance would never have made it this far. My appreciation also goes to the support staff in the management science Department. Thanks to the Mighty Lord whose grace took me to the finishing line.

## **ABSTRACT**

In the telecommunication industry, various persuasive measures such as operations improvement must be offered by companies to encourage and switch them from their service provider (Hrůzová, 1999). This study is therefore seeking to respond to the problems; what is the effect of operations improvement approaches on organizational competitiveness in the telecommunication industry in Kenya? The population of the study consisted a total of 314 firms operating in the Kenyan telecommunications Industry. The study established that there was significantly strong, positive relationship between quality based practices (correlation coefficient 0.563), employee based practices (correlation coefficient 0.631), technology based practices (correlation coefficient 0.671), process based practices (correlation coefficient 0.834), time based practices (correlation coefficient 0.843) and organizations' competitiveness. It was noted that the quality based practices, employee based practices, technology based practices, process based practices and time based practices explain 50.2% of the changes in the organizations' competitiveness were explained by operations improvement practices as represented by the  $R^2$ . The study recommended further comparative research should also be done to compare the firms that have applied strategic planning in their operations and those that do not have them so as to bring further understanding of the importance of strategic planning practices in the Kenyan telecommunication industry.

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## **LIST OF ABBREVIATIONS AND ACCRONYMS**

<b>ICT</b>	Information and Communication Technology
<b>CCK</b>	Communications Commission of Kenya
<b>GDP</b>	Gross Domestic Product
<b>RBV</b>	Resource Based View
<b>OST</b>	Open System Theory
<b>CQI</b>	Continuous Quality Improvement

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Competition among telecommunication companies across the world remains fierce. The competition is not only constrained to new customers, but is also meant to maintain the already existing customers. In the telecommunication industry, various persuasive measures such as operations improvement must be offered by companies to encourage and switch them from their service provider (Hrůzová, 1999).

The study adopted the resource based theory, stakeholder theory, institutional theory and the position theory of marketing. Institutional theory asserts that an organizational environment can greatly alter or influence the formal structure of an organization. More often, it is propounded as part of the market measure.

Operations Improvement Practices may be amorphous to a methodical struggle to look for and relate novel methods of developing processes and methods, meaning, aggressively and repetitively constructing practice improvement (Upton, 1996). Managers in operations deal with; firstly, designing of operations system and secondly, scheduling and monitoring of operations (Dilworth, 1992). These resolutions relate to design, location, scheduling and manufacturing/service delivery with respect to costs, sales and profit manufacturing or services.

Operations Improvement enables an organization to recognize the fundamental operational opportunities and threats, and also to figure out or evaluate the organization's resource capabilities taking into account the strengths and weaknesses

of its resources and processes so as to align itself accordingly to combat the operational challenges. Operations Improvement practices will therefore aid organizations competitiveness. Competitiveness can thus be used to as the manner in which an institution carries out its duties. As such, a wide variety of theoretical efforts come into play, as many scholars have recently explored the role of operation improvement practices on organizational competitiveness. This study draws on institutional theory and marketing theories for organizational competitiveness in telecommunication industry as evidenced in African and other parts of the world.

### **1.1.1 Operations Improvement Practices**

Operations Improvement Practices may be labelled an organized struggle geared toward look for operations activities and methods, improvement (Upton, 1996).

According to study by Ombura (2003), Operations improvement practices may be categorised into six areas based on common perspectives, similar languages and shared tools, which by no means show all possible methods. Therefore the six improvement methods to be analysed in these study are basically the following, quality-based, activity-based, time-based, and currently employed staff-based, Technology-based and process-based practises.

### **1.1.2 Organizational Competitiveness**

Muma at al. (2014) defines organizational competitiveness as the ability of the organization to offer products (goods and services) in the most economical way and better than its competitors.

The current study will focus on relationship between operations improvement practises and competitiveness of Telecom Industry in kenya

### **1.1.3 Telecommunication Industry**

Kenya has seen a visible boost tha has gripped the telecommunication industry (Mutula, 2008).There is tremendous growth in the telecommunication industry in Kenya, with a strong economy of a GDP (Andersson & Odlander, 2014). According to Ndiku (2008 Kenyan telecommunication industry experienced a huge growth in the mobile and internet data services whereas a drop in fixed –line telephony.

### **1.2 Research Problem**

With increasing national and global completion, improving operations practices may be exploited by organizations to improve organizational competitiveness and productivity.

In Kenya, the telecommunication industry which is one of the largest industries has been troubled with issues relating to remaining competitive. This has been seen in the failure of some players in the industry to remain profitable. Airtel Kenya, for example has consistently suffered from posting losses. The inability to remain competitive could be as a result of several factors beyond this research but operations improvement practices could be one of the key factors. Regarding the effect of operation management practices, the results have often been incoherent.

Most scholars purport that operation improvement contributes to a competitive advantage in the telecommunication industry. However, there has been a surge in operations improvement as a management tool among telecommunications industry in Kenya. To make it worse, operations management have been viewed as a mere e procurement tool other than a crucial tool that can be utilized to gain a competitive

advantage. A number of studies have been done globally on the topic operations improvement practices, Hayes (2006) looked at the impacts of technology on operational performance and improvement while Kaynak (2003) studied on impacts of quality management on operational performance of the organization.

Given this backdrop, as observed, no specific study has been done on effects of operations improvement practices on organizational competitiveness in telecommunication industry in Kenya. This study is there for seeking to react to the questions; what is the effect of operations improvement approaches on organizational competitiveness in the telecommunication industry in Kenya?

### **1.3 Objectives of the Study**

The objective of study will be to establish effects of operations improvement practices on organizational competitiveness. The study will be guided and directed by the following specific research objective;

1. To determine the effect of quality-based operational improvement practices on organizational competitiveness in Kenyan Telecommunication Industry
2. To establish the effect of technology-based operational improvement practices organizational competitiveness in Kenyan Telecommunication Industry
3. To establish the effect of time-based operational improvement practises organizational competitiveness in Kenyan Telecommunication Industry
4. To find out the effect of processes -based operational improvement practises organizational competitiveness in Kenyan Telecommunication Industry
5. To investigate the effect of staff - based operational improvement practises organizational competitiveness in Kenyan Telecommunication Industry



## **1.4 Value of the Study**

This study when complete, the report generated will provide information that will be useful in four ways. Firstly, it will enable Telecommunication industry top management identify operation areas to improve on in order to remain competitive in the current telecom industry.

Secondly, it will assist in the identification of problems that firms face in implementation of their operations improvement programmes and hence provide them with valuable input into their improvement activities. Thirdly, the information generated will also be relied on by the management in identifying how operations improvement practices relate to competitiveness of Telecommunication industry as accompany in the telecom industry.

Lastly, the study will stimulate interest among scholars and researchers of operations management by providing literature on operations improvement practices. This will stimulate further research in this area.

## **CHAPTER TWO:LITERATURE REVIEW**

### **2.1 Introduction**

This chapter elaborates the prevailing theoretical, conceptual and empirical works on the study. It first explores operations improvement practices followed by operations improvement practices for organizations competitiveness.

## **2.2 Theoretical Foundations**

The theoretical foundations of this study are the Resource Based View (RBV) and stakeholder theories.

### **2.2.1 Resource Based View**

The RBV recommends that the assets owned by a firm are in the rudimentary factors of its achievement, and these may underwrite to a supportable competitive advantage of the firm (Porter, 1981).

### **2.2.2 Stakeholder Theory**

According to Idris *et al.*, 2003, Stakeholder application could be used by firms meaning to fulfil the popularity of the major stakeholders. Main stakeholders in operations improvement practices are recognized by the level of confidence and collaboration with the practice to be enhanced. Thus, the superior the process the more the number of key stakeholders required. However, this does not deal with the ethical underpinning of the stakeholder theory and the principle of impartiality.

### **2.2.3 Institutional Theory**

Institutional theory asserts that an organizational environment can greatly alter or influence the formal structure of an organization. More often, it is propounded as part of the market measure. Institutional as pointed out by Furusten, Olsson and Edward (2013), institutional theory improves technical efficiency in early adopting organizations leading to legitimization of the environment. The most important concept of the institution theory is that something identified at a higher level can be utilized to explain outcome at the highest level of analysis. This theory will be utilized

in this study to explain on formal structures can promote legitimacy and reduce efficiency that deters organizational competitive position in a technical environment.

#### **2.2.4 Position Theory of Marketing**

This gives precise advantage (Hooley, Saunders and Piercey, 1998). This theory will be employed in this study to clarify how different positions forming part of operations improvement can influence competitive organizational advantage in a telecommunication industry.

#### **2.2.5 Open Systems Theory**

Businesses and societies remain as open systems; causing variations and impacting each other through out. Organizations are open systems and therefore it is. There are four major subsystems in organizations as suggested by (Miller, 2013).

### **2.3 Operations Improvement Practices**

Organizations adopt various practices to enhance operations. These practices are informed by the need to manage quality, cost, customer service and environment among other objectives (Muma et al. 2014). According to Osuga et al. (2015), Quality is a vital component in competition and absolutely the entire organization must put emphasis on it. Quality is certainly vital and that is why it is obligatory to control it in some way (Clarkson, 1995).

Time is an important resource in organizations, especially the service oriented organizations (Muma et al., 2014). To ensure time resource is adequately managed, organizations adopt time-based operational practices. These practices focus on reducing the time required to accomplish various activities such as; development of

products or services, marketing, responding to change in customer demand and environmental dynamics etc. (Osuga and Okello, 2014).

Other best practices of operations are Technology- based practises, employee based practices and process based practices (Ombura, 2003). Technology based practices involve adoption of latest technology improving activities and processes of companies involved and also includes using innovations in the operation process of a company or a firm. Employee-Based Practises are concerned with improvement of the labourer's performance in terms of training and acquisition of new skills (Edwards, 2008). It also includes provision of necessary tools and equipment as well as motivation of staff attached to the firm. Process-Based Practises improvement practises focus on the process of production or provision of services. The practises focus around the process that delivers the products or services more efficient and effective (Idris et al., 2003).

Operations improvement practises may be defined as a systematic effort to seek out and apply new ways of doing operations activities and methods i.e. actively and repeatedly making process improvements (Upton 1996). Due to an ever increasing pace and complexity of business environments and situations, organizations no longer compete on processes but the ability to continually improve processes (Teece, 2007). According to (Zollo and Winter, 2002), the concept of continuous improvement is slowly penetrating into small and large organization due to increased demand of products and services in the market that necessitate companies to produce them effectively and efficiently based on minimal costs. This study will rely on categorization of operations improvement practises suggested by Ombura (2003). Ombura, 2003 identified six broad areas based on common perspectives;

quality-based, activity-based, time-based, employed staff-based, Technology and innovations-based and process-based practises.

### **2.3.1 Quality Based Operations Improvement Practices**

Productivities are the precursors to the modification in the customer service in the telecommunication industry. Productivities are the outcomes of quality improvement and a modification in the customer's status for instance ability to make mobile money transaction currently and even in the future. Continuous quality improvement efforts have adopted a number of strategies (Donabedian, 1980). Specific strategies may include lean production and six-sigma (Paccagnella et al. 2012).

### **2.3.2 Innovations Based Operations Improvement Practices**

The aptitude to transform is progressively looked at as the most imperative reason in evolving and supporting viable advantage (Tidd, 2001). Much importance is put on creating novel businesses which is critical fundamentals of to a business existence (Brown, 1997).

### **2.3.3 Process Based Improvement Practices**

Operations improvement may involve a numbers of practices including, Organizational Strategy Realignment, Organization Restructuring, Total Quality Management, Employees Empowerment (Kibwage, 2012).

Flexibility of the organization structure is vital factor when exercising BPI. Most firms restructure their organization structure in order to pave ways for effective Business Process Improvement (Buzacott, 1996). In the process of restructuring

organization structure, centralization practice is explicitly proposed aiming at exploiting the benefits of a Work flow Management System (Jablonski and Bussler, 1996). The specific advantage of this measure is that resources are committed more flexibly, which gives a better utilization and possibly a better input time. Further splitting up responsibility among the staffs in the line of command is considered as another practice that entails in restructuring organization structure. The idea behind this best practice is that tasks for which different departments share responsibility are more likely to be a source of neglect and conflict.

#### **2.3.4 Employee Based Improvement Practices**

According to Gee and Nystrom (2009), Operations improvement hinges on training. Quality goals become moving targets constantly reset at increasingly high levels.

Improvement efforts are directed at all resources, processes, equipment and tools, environment and safety, information and measurements. There is a certain strategic fit between skills training and quality management that enhances BPI practices implementation and formulation.

#### **2.3.5 Time Based Operations Improvement Practices**

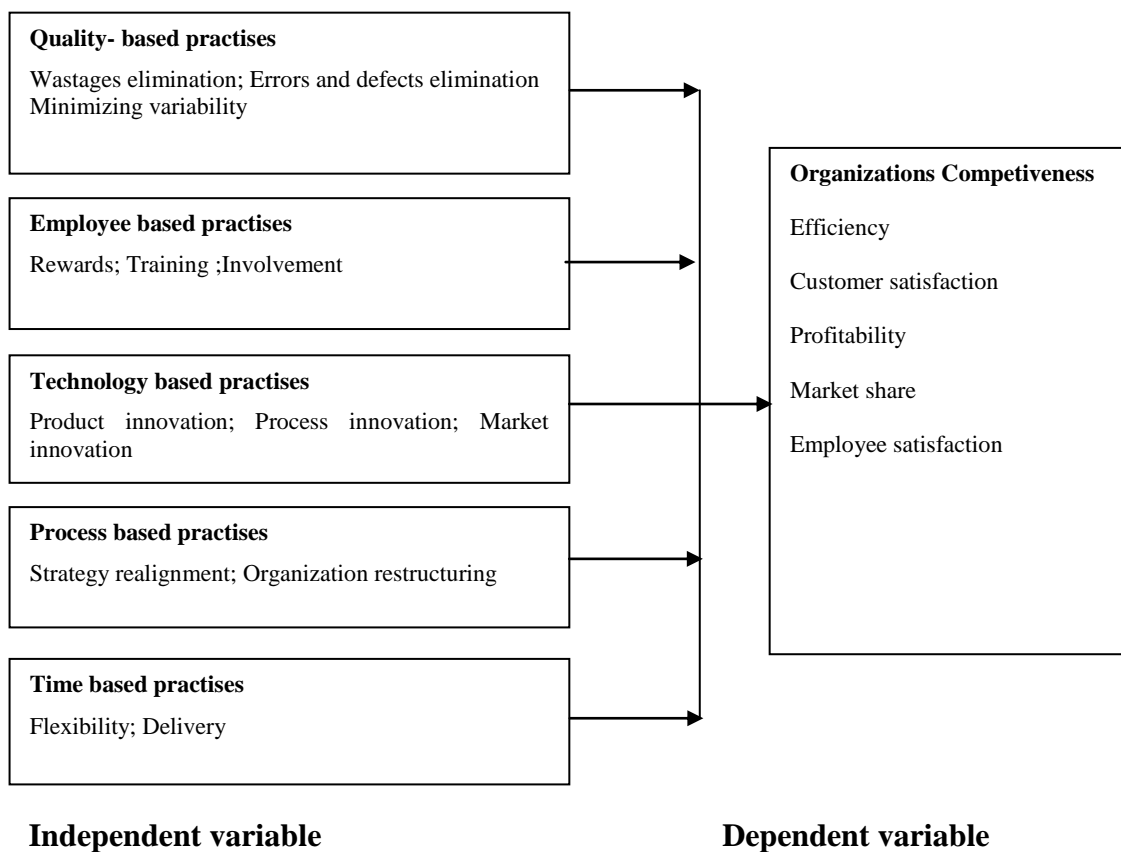
Noori and Radford (1995) observe that although dependability may revolve around delivery, this is only one aspect. Another is honouring legal and moral contracts with customers as well as suppliers. For instance, hypothetically, it is possible to attain great reliability through mentioning extensive conveyance intervals. Nonetheless, businesses can engage reduced reliability and extended lead-times canister can present unfortunate quality all together (Krajewski & Ritzman, 2004).

## 2.4 Operations Improvement and Competitiveness of Organizations

Phusavat and Kanchana (2008) identified the following competitive priorities: quality, cost, delivery, flexibility, customer-focus and innovation which have been adopted in this study. Operations improvement practises have a major influence on competitiveness through product and service design, cost, location, quality, response time, flexibility, inventory and supply chain management, and service (Ingold, Ian and Una Eds (2001).

## 2.5 Conceptual Frame Work

### Operations improvement practises



### **Figure 1: Conceptual Framework**

This study intends to concentrate on five operations improvement practises of Safaricom limited that impacts on its competitiveness as above.; including quality based, time based, process based ,employee based and technology based practises .The study will relate each indicator with organizational competitiveness in this study.



## **CHAPTER THREE:RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter gives the framework of the research methodology which was adopted in carrying out the study. It entails describing the research design which is the blue print for collection, measurement and analysis of data. Following will be collection of data which involved the data collection tools and data collection procedure. Finally data processing and analysis will be described detailing procedures and techniques to be adopted.

### **3.2 Research Design**

Cross-sectional survey will be adopted. Appropriateness of the same is deemed since the information to be gathered is not available from other sources and there will be unbiased representation of the population of interest (Cooper & Schindler, 2006). Cross sectional research design is then used since it will focus on the specific operations improvement practices and their influence on organizational competitiveness in the telecommunication industry. The research will use correlational research design to relate operational improvement with organizational competitiveness. Correlational design relates two or more variables so as to establish the relationship between the variables (Kothari, 2011).

### **3.3: Target Population**

The nature of this study indicates that the unit of analysis will be individual firms operating in the telecommunications sector in Kenya totalling to 314 firms. (A list is attached on appendix 2).The rationale for the choice Telecommunication firms is because they represent the sufficient information on operational improvement

approaches and their influence on competitiveness. The researcher therefore found the sector to be ideal for the study.

## **Sampling Procedure**

A sample represents the entire population. Sampling serves the purpose of obtaining units to be studied from the whole populace. A sample frame is a listing of all populace units from which a sample is taken. The Central Limit Theorem proposes that a sample should be big enough to be a good estimator of the population parameter. With a known level of significance, it is possible to determine the standard error and the sample size from a large population as in this case. In a study of this nature, it is acceptable to make conclusions at 95% confidence level. Using Yamane formula, the following is the computation of the sample size:

$$n = \frac{(Z_{\alpha})^2 \cdot P \cdot (1-P) \cdot N}{\varepsilon^2}$$

$$(Z_{\alpha})^2 \cdot P \cdot (1-P) \cdot N \cdot \varepsilon^2$$

$$n = \frac{N}{1 + N \cdot \varepsilon^2}$$

$$1 + N \cdot \varepsilon^2$$

Where:

N= Total Population

n= Sample Size Required

$\alpha$ = Significance Level

$\epsilon$ = Precision/Error Level

$p$ =Estimated Population Proportion

Using precision level of 5% the appropriate sample size for the study becomes

$$n = \frac{314}{1 + 314(0.05)^2}$$

$$n = 176$$

The study therefore will use multistage sampling method. The first stage will be made up of the 176 firms as obtained from the sample size. The second stage was made up of the sampling using, that is the management from the firms. Stratified sampling method was used to come up with the number of firms to be sampled from each stratum.

**Table 3.1: Sample Size**

Strata	Target	Sample	Sample size
Top level management	32	0.11	19
Middle level management	114	0.36	63
Low level management	168	0.53	94
Total	314		176

### **3.4 Data Collection**

Mugenda and Mugenda (2013) define population as a total collection of elements about which inference is made for the purpose of research. The telecommunication industry is used as the unit of study; Primary data was collected from

Survey questionnaires will be used for collecting data. Survey questionnaires are a set of pre-coded structured questions that will be administered to the respondents to tick appropriately. The questionnaires will have research items on every indicator in the study. A Likert scale with five points will be used since the data in this study is qualitative. The respondents for this instrument will constitute the organizations managers, selected from various departments such as Regional operations, human resources, Retail sales and Distribution, marketing department.

### **3.5 The Data Processing and Analysis**

Data collected will be sorted out and edited to ensure accuracy. After they have being sorted out, the data will be analyzed using SPSS version 21. The indicators in this study will be analysed using means and standard deviation while the relationship between the variables will be established through one tailed Spearson's correlation. The study will further use multiple correlation analysis to establish the effect of operational improvement practices on organizational competitiveness. The study will be guided using the model below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where; Y – Organizational Competitiveness

$\beta_0$  - Constant

$\beta_1$  and  $\beta_2$  - Regression coefficients

X1- Quality Based Operations Improvement Practises

X2-Innovations Based Operations Improvement Practises

X3- Process Based Improvement Practises

X4-Employee Based Improvement Practises

X5- Time Based Operations Improvement Practises

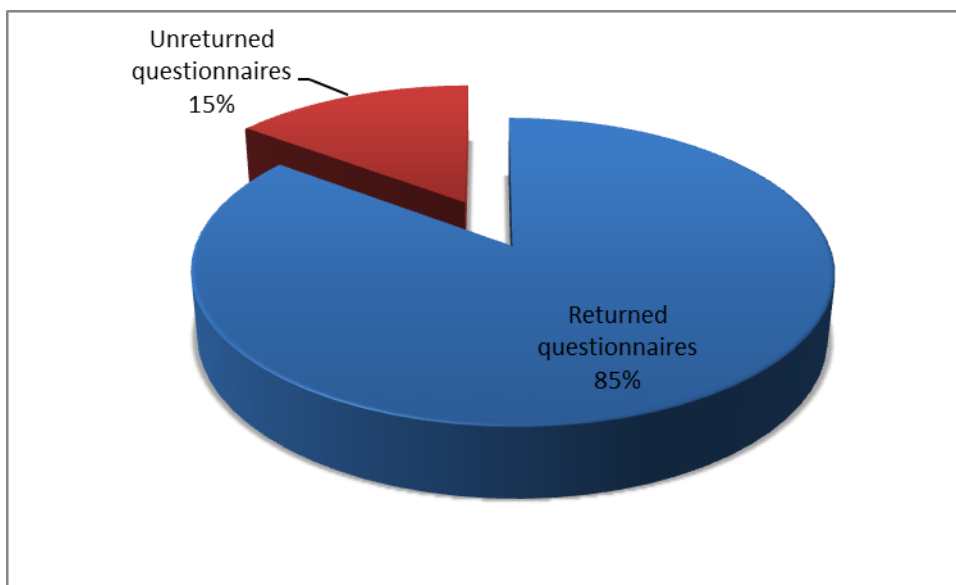
$\varepsilon$  - Error term

## CHAPTER FOUR: DATA ANALYSIS RESULTS AND DISCUSSIONS

### 4.1 Introduction

This section deliberates on the explanation and demonstration of the outcomes collected.

### 4.2 Response Rate



**Figure 4.1: Response Rate**

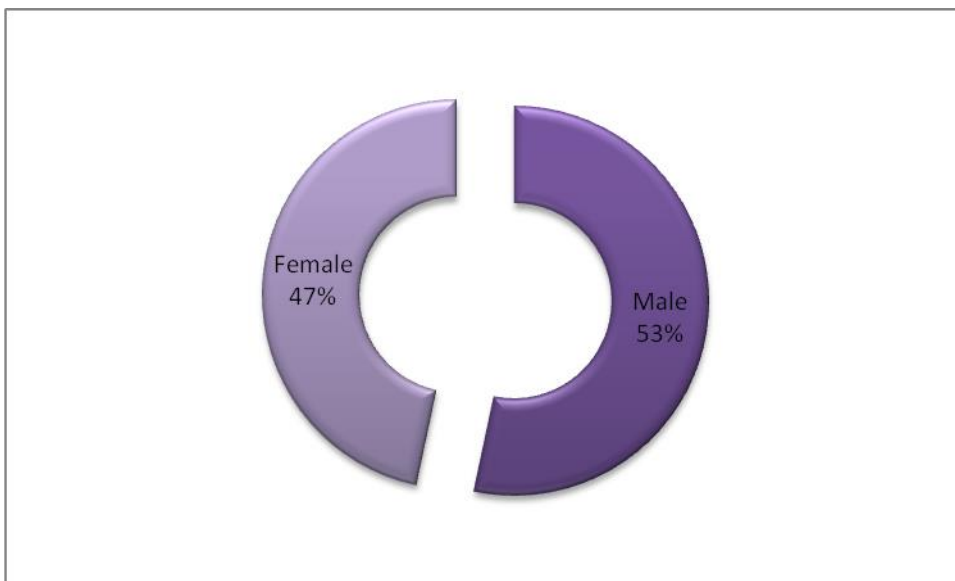
The study focused on 176 interviewees of top, middle and supervisory level in the telecommunication industry in Kenya. Of the questionnaires issued, 150 completed and received back resulting to a response rate of 85%. This rate of return was acceptable to make deductions for the study. Weisberg, Krosnick & Bowen (2006) recommended a response rate of 70%.

### 4.3 Respondents Profiling

This endeavoured to ascertain the demographic evidence from the participants in the telecommunication firms in Kenya. The bio data of the participants included the gender of the respondents, the number of years worked in the company, highest level of education and department the respondents work in the organization. The findings from the analysis are illustrated in the following subsections.

#### 4.3.1: Respondents Gender

This recognized the gender of the participants. The results from the analysis are illustrated in the figure below as shown.



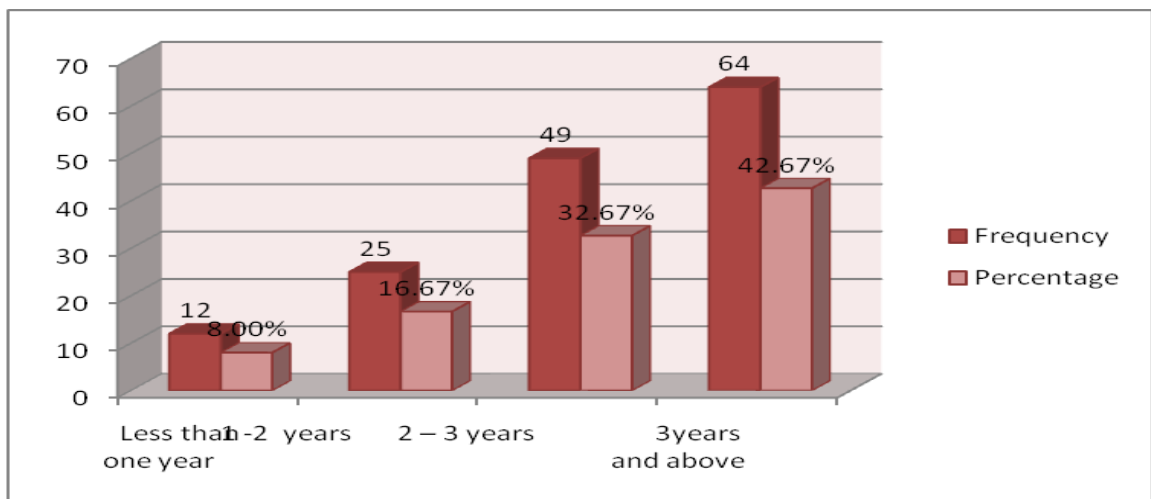
**Figure 4.2: Gender of the Respondents**

From the respondents analysis, it was noted that majority (53%) specified themselves as Male while 47% specified themselves female. The Disparity between the gender was thus noted to small to create any biasness on the study of the effects of operations

improvement practices on organizational competitiveness in the telecommunication industry.

### 4.3.2 Years Worked in the Company

The results from the analysis are illustrated in the figure below as shown.



**Figure 4.3: Years of Operation**

The study showed that majority (42.67%) of the respondents indicated they had worked in the telecommunication firms for 3 years and above. Closely after were respondents who indicated that they had been operation in the telecommunication firms for 2-3 years. This was calculated from a frequency of 49 respondents. 16.67% of the respondents indicated that they had been operating in the telecommunication firms for 2-3 years while 8% of the respondents indicated that they had been operating for less than one year. The study thus showed that the respondents had sufficient experience to provide data on effects of operations improvement practices on organizational competitiveness in the telecommunication industry.



### 4.3.3 Highest Education Level

The result from the SPSS descriptive is shown below.

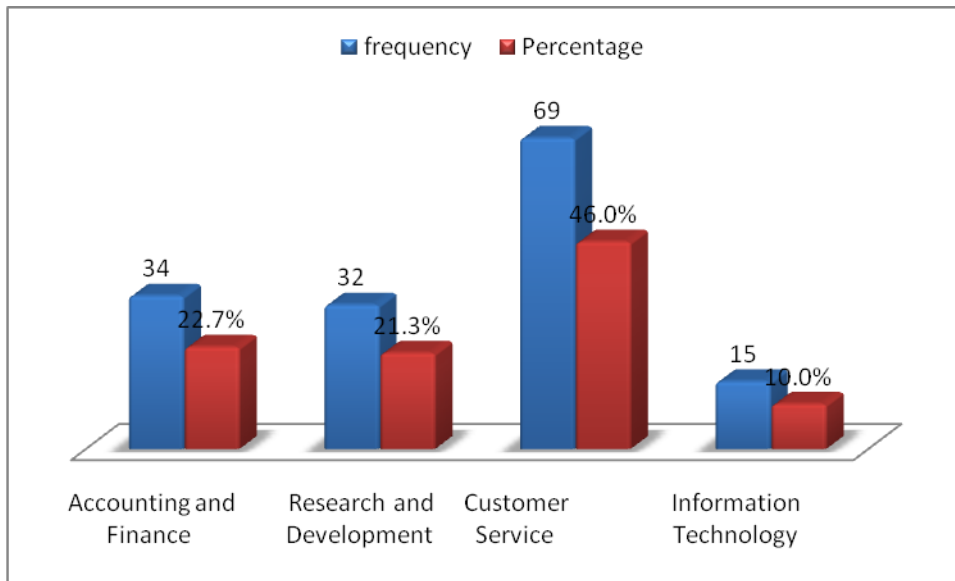
**Table 4.1: Level of Education**

Level of education	Frequency	Percentage
Certificate	2	1.33%
Diploma	39	26%
Degree level	59	39.33%
Masters and above	50	33.33%
<b>Total</b>	<b>150</b>	<b>100.0%</b>

From the analysis of findings, deduced was that majority of the interviewees 59 (39.33%) specified that their 50 (33.33%) of the respondents indicated that their 39 (26%) of the questionnaire participants indicated that their while the least frequency 4 (10%) was of respondents who indicated that their highest level of education was a high school certificate. The study established that a significant number of the participants were well learned to provide sufficient information on effects of operations improvement practices on organizational competitiveness.

### 4.3.4 Department of the Respondents

The results from the analysis of findings are illustrated in the figure below as shown.



**Figure 4.4: Department of the Respondents**

From the findings majority of the interviewees (69) 46% confirmed that they worked in the customer service department in the telecommunication firms. (34) 22.7% of the respondents indicated that they worked in the accounting and finance department while 32(21.3%) indicated that they worked in the research and development department. The least frequency 15 (10%) was of respondents who indicated that they worked in the information technology department.

#### **4.4 Descriptive Statistic**

The respondents were asked to rate how they felt about different variables related operations improvement practices in a five point Likert scale. The range was from strongly agree (5) to 'strongly disagree' (1). The score of 1 represented "strongly disagree" 2 represented "disagree", 3 represented "neutral", 4 represented "agree" and five represented "strongly agree"

#### 4.4.1: Quality Based Operations Improvement Practises

The study sought to determine whether respondents agreed to various statements relating to quality based operations improvement practices. The table 4.5 below shows the findings of from the respondents.

**Table 4.2: Quality Based Operations Improvement Practises**

	Mean	Standard deviation
Your company has organization quality policy	4.564	0.535
The company has quality certification	4.012	0.404
The company gets products from organizations with quality certification	4.134	0.509
Your company complies with Kenya Bureau of Standards quality standards and regulations	3.983	0.383
Your company complies with international quality standards	3.994	1.084
The company uses statistical quality control techniques	4.048	0.229
The company inspects products when they come in	3.954	0.340
The company strives to continuously improve quality of products	4.499	0.331

From the findings in the SPSS analysis, the statement, Your Company has organization quality policy had the highest level of mean (4.564) meaning that majority of the respondents strongly agreed with the statement. The standard deviation calculated from the analysis of 0.535 indicated uniformity in the responses from the respondents. Also noted was that a great number of the respondents strongly agreed to the statement that the company gets products from organizations with quality certification. This was supported by the mean value calculated of 4.134. A significant number of the respondents also agreed to the statement; the company uses statistical quality control techniques, this was inferred from the mean value calculated in the analysis of 4.048. The standard deviation of 0.229 calculated in the SPSS indicated little variation in the responses of the respondents. The study also established that a significant number concurred with the illustration; your company complies with international quality standards. This was noted from the mean calculated of 3.994, which indicated that most respondents agreed to the statement and the standard deviation calculated of less than 1.5 indicates that there was little variance from the mean value. Generally the study noted that the quality based operations improvement practices enhance competitiveness in the telecommunication industry.

#### **4.4.2: Innovations Based Operations Improvement Practises**

The study intended to determine the causes of innovation based operations improvement practices and competitiveness in the telecommunication industry.

**Table 4.2: Innovations Based Operations Improvement Practices**

	<b>Mean</b>	<b>Standard deviation</b>
Your company is has dedicated research and innovation department	4.363	0.4846
Your company adopts new technology as it comes	3.934	0.3389
Your company uses innovation as a tool to meet changing market needs	4.536	0.1964
Your company uses innovation to bring incremental change in the organization	4.302	0.3949
Your company uses current technology to improve its products	3.442	0.4936
Your company use modern technology to respond to market dynamics	4.393	0.4344

Based on the responses from the respondents, it was clear that most respondents saw that innovation based operations improvement practices had significant influence on competitiveness in the telecommunication industry. This inference was realised by responses of statements relating to innovation based operations in the respondents. It was established from the analysis that most respondents strongly agreed on the statement; your company uses innovation as a tool to meet changing market needs. This was established by the high mean value calculated of 4.536. The standard deviation calculated of 0.1964 indicates uniformity in the responses from the respondents. It was also established that majority of the respondents concurred with

the statement: Your company use modern technology to respond to market dynamics. This was seen true by the high mean value calculated in the spss analysis of 4.393. The standard deviation calculated in the analysis of 0.4344 indicated little variance from the mean mark in the responses. The study thus generally noted that Innovations Based Operations Improvement Practices had a significant influence on competitiveness in the telecommunication firms.

#### **4.4.3: Process Based Improvement Practises**

The study sought to establish the effects of process based improvement practices and competitiveness in the telecommunication firms. See table 4.4 below.

**Table 4.3: Process Based Improvement Practices**

Your company keep improving organizational business processes	4.194	0.693
The company sometimes re-engineer its processes to adopt to operational changes	4.406	0.808
The company keeps changing design of operations to enhance service delivery	4.126	0.588
The company trains employees on new processes	3.949	1.056
The company align operational strategies with organizational and market needs	4.334	0.689
The company adopts continuous incremental innovation in its operations	3.992	.958

From the analysis of the descriptive statistics, it was clear that most respondents believed that the process based improvement practices had a significant effect on

competitiveness in the telecommunication industry. This was noted true by the responses made from the respondents of statements related to process based improvement practices. For instance, it was noted that The Company sometimes re-engineer its processes to adopt to operational changes. This was seen by the high mean value calculated of 4.406. The standard deviation calculated of 0.808 indicated that majority of the respondents were of a similar opinion. It was also noted that respondents agreed on the statement that the company align operational strategies with organizational and market needs. This inference was established by the mean of 4.334. The small standard deviation indicated that there was little variance in the responses from the respondents. Also noted was that most respondents concurred that the company adopts continuous incremental innovation in its operations. This was noted true by the mean calculated on the statement of 3.992. The standard deviation calculated in the study of 0.958 indicated uniformity in the responses from the respondents. Generally, it was also noted that the process based improvement practices had a significance influence on competitiveness in the telecommunication industry.

#### **4.4.4: Employee Based Improvement Practises**

The study wanted to determine the level of agreement on statements relating to employee based improvement practices and competitiveness in the telecommunication firms. See table 4.6 below.

**Table 4.4: Employee Based Improvement Practises**

	Mean	Standard Deviation
Your company involves employees in operational strategy formulation	4.312	0.531
Your company involves employees in operational strategy implementation	4.105	0.622
Your company involves employees in operational strategy evaluation	4.322	0.484
Your company well communicated strategies	4.378	0.394
Your company reward employees adequately in terms of monetary rewards	4.854	0.177
Your company give adequate non-monetary reward to employees	3.912	0.902
Your company trains employees on strategy formulation, implementation and evaluation	4.115	1.095
Your company empower employees by providing required resources	3.144	0.369

It was noted from the analysis that employee based improvement approaches had a significant effect in the telecommunication industry. This was noted true by the high mean values calculated on statements relating employee based improvement practices in relation to competitiveness. For instance, it was noted that majority of the respondents strongly agreed with the statement; Your company reward employees adequately in terms of monetary rewards. This was noted true since the statement,



calculated from the SPSS analysis a mean of 4.854 and a standard deviation calculated was small indicating little variance in the responses from the respondents and that most interviewees were in strong agreement.. Also noted was most interviewees concurred to the item question; your company involves employees in operational strategy evaluation. This was noted true by the high mean value calculated in the analysis of 4.322 and the standard deviation calculated in the analysis of 0.531 indicated there was a general agreement of the statement and there was uniformity in the responses from the respondents. The study also noted that most respondents agreed with the statement; Your Company involves employees in operational strategy implementation. This was noted by the mean calculated of 4.105 and a standard deviation of 0.622. The standard deviation calculated in the analysis indicated there was uniformity in the responses from the respondents. From the analysis, it can be generally deduced that the employee based improvement practices have significant influence on competitiveness in the industry.

**Table 4.5: Time Based Operations Improvement Practises**

	Mean	Standard Deviation
Your company regards time an important resource	4.312	0.531
The company takes limited time to identify market needs	4.456	0.643
The company takes limited time to respond to market needs	4.458	0.246
Your company takes short time to respond to customer complaints	4.309	0.890
Your company receive inputs in time	4.546	0.672
Your company makes payment in time	3.954	1.102

It was noted from the analysis that had a significant effect in the telecommunication industry. This was noted true by the high mean values calculated on statements time based improvement practices in relation to competitiveness. For instance, it was noted that that a significant number of participants strongly agreed with the statement; Your company receive inputs in time. This was noted true since the statement, calculated from the SPSS analysis a mean of 4.546 and a standard deviation calculated was small indicating little variance in the responses from the respondents and that interviewees were in strong agreement. This was noted true by the high mean value calculated in the analysis of 4.456 and the standard deviation calculated in the analysis of 0.643 indicated there was a general agreement of the statement and there was uniformity in the responses from the respondents. The study also noted that most participants

agreed with the illustration; Your company takes short time to respond to customer complaints. This was noted by the mean calculated of 4.309 and a standard deviation of 0.890. The standard deviation calculated in the analysis indicated there was uniformity in the responses from the respondents. From the analysis, it can be generally deduced that the time based operations improvement practices had significant influence competitiveness in the telecommunication industry

## 4.5: Inferential Statistics

### 4.5.1 Correlation Analysis

**Table 4.6: Correlation Coefficient**

		Quality based practices	Employee based practices	Technology based practices	Process based practices	Time based practices	Organizational
Quality based practices	Pearson Correlation	1					
	Sig. (2-tailed)	.					
Employee based practices	Pearson Correlation	0.446	1				
	Sig. (2-tailed)	0.003	.				
Technology based practices	Pearson Correlation	0.462	0.284	1			
	Sig. (2-tailed)	0.019	0.003	.			
Process based practices	Pearson Correlation	0.892	0.653	0.547	1		
	Sig. (2-tailed)	0.032	0.043	0.031	.		
Time based practices	Pearson Correlation	0.842	0.632	0.582	0.839	1	
	Sig. (2-tailed)	0.013	0.001	0.008	0.005		
Organizational Competitiveness	Pearson Correlation	0.563*	0.631*	0.671*	0.834*	0.843*	1

ss	Sig. (2-tailed)	0.003	0.005	0.004	0.005	.009	
	N	150	150	150	150	150	150

*Source: Author 2016*

The study established that there was significantly strong, positive relationship between quality based practices (correlation coefficient 0.563), employee based practices (correlation coefficient 0.631), technology based practices (correlation coefficient 0.671), process based practices (correlation coefficient 0.834), time based practices (correlation coefficient 0.843) and organizations' competitiveness.

#### 4.5.2 Regression Analysis

**Table 4.8: Coefficient of Determination ( $R^2$ )**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.708(a)	0.502	0.491	.52126

*Source: Author 2016*

The descriptive's showed 50.2% of the changes in the organizations' competitiveness were explained by operations improvement practices as represented by the  $R^2$ .

**Table 4.9: ANOVA<sup>b</sup>**

Model	Sum of Df	Mean	F	Sig.

		Squares		Square	Calculated	
1	Regression	51.198	6	8.553	5.022	.0015 <sup>a</sup>
	Residual	243.529	143	1.703		
	Total	294. 727	149			

**Source: Author 2016**

Table 4.3 above, ANOVA indicates significance of 0.0015. This value lies below 0.05 indicating how operations improvement practices influence competitiveness in the telecommunication industry.

**Table 4.10: Coefficient of Regression**

		Unstandardized		Standardized	T	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
(Constant)		0.93	1.355		1.500	0.574
			2			
Quality based practices		0.62	0.209	1.634	5.901	0.011
			2			
Employee based practices		0.14	0.062	0.927	2.935	0.038
			6			
Technology based practices		0.87	0.149	1.388	3.514	0.021
			1			
Process based practices		0.52	0.058	0.992	3.194	0.022

<b>practices</b>	7				
<b>Time based practices</b>	0.95	0.358	0.494	3.292	0.012
	7				

**a. Dependent Variable: Organizations’ competitiveness**

Regression equation obtained from table 4.9 above:

$$\text{Organizations' competitiveness} = .932 + 0.622*\text{Quality based practices} + 0.146*\text{Employee based practices} + 0.374*\text{Technology based practices} + 0.127*\text{Process based practices} + 0.428 * \text{Time based practices}$$

A Coefficient of Regression analysis was conducted so as to establish the effect of the operations improvement practices on organizational competitiveness in the telecommunication industry. According to the Coefficient of Regression, when all other variables are held constant, a rise per item in quality based practices leads to a 0.622 unit increase in the organizations’ competitiveness while a unit increase in employee based practices results to a .146 unit increase in the organizations’ competitiveness. Also noted from the regression was that a unit increase in technology based practices results in .374 unit increase in organizations’ competitiveness while a unit increase in process based practices results to .127 unit increase in organizations’ competitiveness. A unit increase in the time based practices resulted to a .428 unit increase in organizational competitiveness. The study thus noted that the operations improvement practices influence organizations’ competitiveness in the telecommunication industry.

## **CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

In this chapter a summary of the outcomes, conclusions from chapter above as well as recommendations are debated. The study intended to establish the influence of competitive strategies on performance of insurance companies in Kenya.

### **5.2 Summary of the Findings**

The study targeted 176 firms as obtained from the target population. Of the questionnaires issued, 150 gave back completed survey forms giving a success of 85%. Achieved success was ample in making deductions. Weisberg, Krosnick & Bowen (2006) recommended a response rate of 70%. From the analysis of the respondents, it was noted that majority (53%) specified that they were Male while 47% specified that they were female. The study established that most of them were well educated to provide sufficient information on effects of operations improvement practices on organizational competitiveness.

From the findings majority (69) 46% worked in the customer service department in the telecommunication firms. (34) 22.7 in the accounting and finance areas while 32(21.3%) indicated that they worked in the research and development department. Based on the responses from the respondents, it was clear that most respondents saw that innovation based operations improvement practices had significant influence on competitiveness in the telecommunication industry. This inference was realised by responses of statements relating to innovation based operations in the respondents. It was established from the analysis that most respondents strongly agreed on the

statement; your company uses innovation as a tool to meet changing market needs. This was established by the high mean value calculated of 4.536. The standard deviation calculated of 0.1964 indicates uniformity in the responses from the respondents.

It was noted from the analysis that employee based improvement approaches had a significant effect in the telecommunication industry. This was noted true by the high mean values calculated on statements relating employee based improvement practices in relation to competitiveness. For instance, it was noted that majority of the respondents strongly agreed with the statement; Your company reward employees adequately in terms of monetary rewards. This was noted true since the statement, calculated from the SPSS analysis a mean of 4.854 and a standard deviation calculated was small indicating little variance in the responses from the respondents.

The study established that there was significantly strong, positive relationship between quality based practices (correlation coefficient 0.563), employee based practices (correlation coefficient 0.631), technology based practices (correlation coefficient 0.671), process based practices (correlation coefficient 0.834), time-based practices (correlation coefficient 0.843) and organizations' competitiveness. The independent variables that were studied explain 50.2% of the changes in the organizations' competitiveness were explained by operations improvement practices as represented by the  $R^2$ . Further research should therefore be conducted to investigate the other variables (49.8%) affecting the organizations' competitiveness.

The analysis of variance indicated that the regression model predicts the outcome variable significantly well. This indicates the statistical significance of the regression



model that was applied. The significance value is 0.0015. This value is less than 0.05 which means that the model is statistically significant in predicting how.

### **5.3 Conclusion**

The study established that various novel methods to organizational improvement have been introduced, ranging from re-engineering and quality systems to organizational education, besides novel methods of determining organizational activities.

The study also concluded that process innovation embraces quality function Deployment and business process reengineering. The study noted that it is a type of innovation, which is not easy, but its purpose is now well understood. The study found out that an efficient supplier who keeps working on productivity gains can expect, over time, to develop products that offer the same performance at a lower cost. Such cost reductions may, or may not, be passed on to customers in the form of lower prices.

### **5.4 Limitations of the Study**

Lack of cooperation was another limitation witnessed by the researcher. Respondents were naturally suspicious and uneasy when directed to cooperate in a study that they were not aware of its consequence. To further calm and set at ease the respondents, the researcher explained the nature of the study and its intended purpose and that it was purely an academic undertaking and that information divulged would be held in confidentiality by the researcher.

## **5.5 Recommendations**

This study looked at the effects of operations improvement practices on organizations' competitiveness in the telecommunication industry. Further study is recommended in other industries in order to further insights comprehensively on the effects of operations improvement practices on organizational competitiveness in Kenya. This would help the firms to know the most important areas in the firms that they would concentrate their strategies on so as to reap more in meeting their endeavors.

Since this study quantitatively assessed the effects of operations improvement practices on organizations' competitiveness in the telecommunication firms, the research suggests more study to qualify this efficiency so as to give face and value to how operations improvement practices is influences competitiveness in the telecommunication firms. Further comparative research should also be done to compare the firms that have applied strategic planning in their operations and those that do not have them so as to bring further understanding of the importance of strategic planning practices in the telecommunication industry in Kenya.

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## APPENDICES

### **Appendix I: Letter of Introduction**

UNIVERSITY OF NAIROBI,  
KISUMU CITY CAMPUS,

Dear Sir/Madam,

#### **RE: PERMISSION TO CARRY OUT ACADEMIC RESEARCH**

I am a Master of Science (Operations Management) student at University of Nairobi conducting a research study entitled “*EFFECT OF OPERATIONS IMPROVEMENT PRACTICES ON ORGANIZATIONAL COMPETITIVENESS IN TELECOMUNICATION INDUSTRY IN KENYA*”.

The purpose of this letter is to request you to kindly fill in the questionnaire with precision and accuracy. The questionnaire is supposed to assist in answering specific objectives of the research which is being undertaken as part of the University requirement. Any information given herein will be treated with utmost confidentiality and only be used for the purpose of research. So kindly feel free to fill the questionnaire.

Thanking you in advance for your contribution.

Yours faithfully,

**JACKLINE JUSA OKELLOH**



## **Appendix II: Questionnaire**

This questionnaire will be seeking on the staff of Safaricom Company to provide information on the topic '**EFFECT OF OPERATIONS IMPROVEMENT PRACTICES ON COMPETITIVENESS IN TELECOMMUNICATION INDUSTRY IN KENYA**'. The Information is intended for academic purposes only and will not be divulged to any other person. Please complete all sections of this document. All questions are interrelated and are very important for the study.

### **PART A: BACKGROUND DATA**

- a. Gender: Male     Female
  
- b. How long have you worked in this company?
  - i. Less than one year
  
  - ii. 1 -2 years
  
  - iii. 2 – 3 years
  
  - iv. 3years and above
  
- c. What is your highest educational qualification?
  - i. Certificate
  
  - ii. Diploma
  
  - iii. Degree level
  
  - iv. Master and above
  
- d. In which department do you work?
  - i. Accounting and Finance
  
  - ii. Research and Development
  
  - iii. Customer Service

**SECTION B: QUALITY BASED OPERATIONS IMPROVEMENT PRACTISES**

The following statements relate to Quality Based Operations Improvement Practises. Using the key (**Where: 5- Strongly Agree; 4- Agree; 3-Indifferent; 2-Disagree and 1-Strongly Disagree**), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
a)	Your company has organization quality policy					
b)	The company has quality certification					
c)	The company gets products from organizations with quality certification					
d)	Your company complies with Kenya Bureau of Standards quality standards and regulations					
e)	Your company complies with international quality standards					
f)	The company uses statistical quality control techniques					
g)	The company inspects products when they come in					
h)	The company strives to continuously improve quality of products					

**SECTION C: INNOVATIONS BASED OPERATIONS IMPROVEMENT PRACTISES**

The following statements relate to Innovations Based Operations Improvement Practises. Using the key (**Where: 5- Strongly Agree; 4- Agree; 3-Indifferent; 2- Disagree and 1-Strongly Disagree**), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
a)	Your company is has dedicated research and innovation department					
b)	Your company adopts new technology as it comes					
c)	Your company uses innovation as a tool to meet changing market needs					
d)	Your company uses innovation to bring incremental change in the organization					
e)	Your company uses current technology to improve its products					
f)	Your company use modern technology to respond to market dynamics					

**SECTION C: PROCESS BASED IMPROVEMENT PRACTISES**

The following statements relate to Process Based Improvement Practises. Using the key (Where: 5- Strongly Agree; 4- Agree; 3-Indifferent; 2-Disagree and 1- Strongly Disagree), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
a)	Your company keep improving organizational business processes					
b)	The company sometimes re-engineer its processes to adopt to operational changes					
c)	The company keeps changing design of operations to enhance service delivery					
d)	The company trains employees on new processes					
e)	The company align operational strategies with organizational and market needs					
f)	The company adopts continuous incremental innovation in its operations					

**SECTION E: EMPLOYEE BASED IMPROVEMENT PRACTISES**

The following statements relate to Employee Based Improvement Practises. Using the key (Where: Strongly disagree-1; Disagree-2; Indifferent-3; Agree-4; Strongly agree-5), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
a)	Your company involves employees in operational strategy formulation					
b)	Your company involves employees in operational strategy implementation					
c)	Your company involves employees in operational strategy evaluation					

d)	Your company well communicated strategies					
e)	Your company reward employees adequately in terms of monetary rewards					
f)	Your company give adequate non-monetary reward to employees					
g)	Your company trains employees on strategy formulation, implementation and evaluation					
h)	Your company empower employees by providing required resources					

**SECTION F: TIME BASED OPERATIONS IMPROVEMENT PRACTISES**

The following statements relate to Time Based Operations Improvement Practises. Using the key (**Where: Strongly disagree-1; Disagree-2; Indifferent-3; Agree-4; Strongly agree-5**), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
i)	Your company regards time an important resource					
j)	The company takes limited time to identify market needs					
k)	The company takes limited time to respond to market needs					
l)	Your company takes short time to respond to customer complaints					
m)	Your company receive inputs in time					
n)	Your company makes payment in time					

**SECTION E: ORGANIZATIONAL COMPETIVENESS**

The following statements relate to Organizational Competiveness. Using the key (**Where: Strongly disagree-1; Disagree-2; Indifferent-3; Agree-4; Strongly agree-5**), tick as appropriate the extent to which you agree with them.

No	Statement	Rating				
		5	4	3	2	1
a)	Your company incurs minimum costs in purchasing					
b)	The company incurs minimum costs in transportation					
c)	Cost incurred in sourcing for and delivery of company inputs is at minimum possible level					
d)	Your company has good and lasting relationship with suppliers					
e)	Cost incurred in making the products available to consumers is at the minimum possible level					
f)	The current capacity of the company is used to the maximum					
g)	The company achieves continuous production and operations					
h)	The company's operation system does not result into wastages					
i)	The company meets the unexpected market demand					
j)	Customers are satisfied with the quality and safety of the company products					
k)	Customers are satisfied that their interests are taken care of in company products and operations.					
l)	Customers get true and adequate information about its products and features, including side effects if any.					
m)	The company records minimum complaints from the public on service levels					
n)	Your company is faced with minimal government regulations issues.					

Thank you for taking the time to complete this questionnaire.

## **Appendix III: List of Telecommunication Firms In Kenya**

### **I. NETWORK FACILITIES PROVIDERS (TIER1)**

1. Airtel Networks Kenya Limited
2. Safaricom Limited
3. Telkom Kenya Limited
4. Equitel Limited

### **II. NETWORK FACILITIES PROVIDERS ( TIER 2)**

1. Alldean Networks Limited
2. Bell Western Limited
3. Comcarrier Satellite Services Limited
4. Fourth Generation Networks Limited
5. Frontier Optical Networks Limited
6. Gateway Telecommunications (Kenya) Limited
7. Internet Solutions Kenya Limited
8. iWayAfrica Kenya Limited
9. Jamii Telecommunications Limited
10. Kenya Data Networks Limited
11. Kenya Power And Lighting Company Limited
12. Kenya Towers Limited
13. Mobile Telephone Networks Business Limited

14. Sea Submarine Communications Limited
15. Simbanet Com Limited
16. Wananchi Group (Kenya) Limited
17. Wananchi Telecom Limited

### **III. NETWORK FACILITIES PROVIDERS ( TIER 3)**

1. Dr. Wireless Limited
2. Embarq Limited
3. Emerging Markets Comm. (K) Limited
4. Horyal Services Limited
5. Icon Wireless Limited
6. Industrial Technology Trading Company Limited
7. Kasnet Africa Limited
8. Klass Image Limited
9. Rainbow Network Solutions Limited
10. Sovaya Communications Limited
11. Valleypoint Telecoms Limited

### **CATEGORY B**

#### **APPLICATIONS SERVICE PROVIDERS (ASP)**

1. Accesskenya Group Limited



2. Adtel Phone Co. Limited
3. Africa Fleet Management Solutions Limited
4. Africa Online
5. Airtel Networks Kenya Limited
6. Airtouch Connections Limited
7. Aja Limited
8. Alldean Networks Limited
9. Attain Enterprise Solutions Limited
10. Au Gab Services
11. Backtrack Technologies Limited
12. Bandwidth & Cloud Services Limited
13. Bell Western Limited
14. Beneficial Solutions and Technocrats Limited
15. Bernsoft Interactive Limited
16. Birdseye Auto Track Limited
17. Boss Communications Company
18. Callkey (E.A) Limited
19. Cellulant Kenya Limited
20. Commcarrier Satellite Services Limited
21. Comtec Hosting Solutions Limited
22. Converged Information Services Limited

23. Craft Silicon Limited
24. Databit Limited
25. Diamond Online Satellite Systems
26. Digital Distribution Centre (K) Limited
27. Dr. Wireless Limited
28. Electronic and Transmission Media Limited
29. EM Communications Limited
30. Embarq Limited
31. Emerging Markets Comm. (K) Limited
32. Enterprise Data Freedom Limited
33. Essar Telecom Kenya Limited
34. Fanaka Online Limited
35. Finnet Communications Limited
36. Flex Communications Limited
37. Fourth Generation Networks Ltd
38. Frontier Informatics Limited
39. Frontier Optical Networks Limited
40. Gateway Telecommunications (Kenya) Limited
41. Geda Limited
42. Gelati Limited
43. Global Data Solutions Limited

44. Horyal Services Limited
45. Hotego Networks Limited
46. Icon Wireless Limited
47. Indigo Telecom Limited
48. Industrial Technology Trading Company Limited
49. Instaconnect Limited
50. Intergrat Limited
51. Internet Solutions Kenya Limited
52. Iphone Global Ltd
53. Itek Solutions Limited
54. iWayAfrica Kenya Limited
55. Jadalink Kenya
56. Jamii Telecommunications Limited
57. Karibu Telecom Limited
58. Kasnet Internet Services Limited
59. Kentrace And Accessories
60. Kenya Data Networks Limited
61. Kinde Engineering Works Limited
62. Klass Image Limited
63. Lantech (Africa) Limited
64. Linkers International Limited

65. Lyle Kenya Limited
66. Mobile Telephone Networks Business Kenya Limited
67. Nairobinet (K) Limited
68. Next Generation Networks Telecommunications (EA)
69. Nia Moja Business Solutions (K) Limited
70. Ninewinds Communications Limited
71. Nirali Enterprises Limited
72. Ocean Five Telecom Kenya Limited
73. Octopus Ict Solutions Limited
74. Onmobile Kenya Telecoms Limited
75. Odra Bay Data Solutions Limited
76. Oyster Enterprises Limited
77. Plans Online (K) Limited
78. Porting Access (K) Limited
79. Pwani Telecoms Limited
80. Rainbow Network Solutions Limited
81. Rasmilink
82. Safaricom Limited
83. Sahanet Limited
84. Sat Africa Limited
85. Sea Submarine Communications Limited

86. Servtel Communications Limited
87. Sisi Communications Limited
88. SITA
89. Sovaya Communications Limited
90. Speedial Connections Limited
91. Suuban Enterprises
92. Swift Global (K) Limited
93. Telkom Kenya Limited
94. Texas Alarms Kenya Limited
95. Total Security Surveillance Limited
96. Toucan Network Limited
97. Tracer Limited
98. Tracesoft Limited
99. Tuseme Africa Limited
100. Universal Connect Limited
101. Uunet Kena Limited
102. Uvacorp Technologies Limited
103. Valleypoint Telecoms Limited
104. VirtualSat Limited
105. Vision Network Solutions Africa Limited
106. VOIP Pro(K) Ltd

107. Wananchi Group Kenya Limited
108. Web Tribe Limited
109. Wifismartzone Solutions
110. Wingu Technologies Limited
111. Xtranet Communications Limited
112. Finserve Africa Limited
113. Zioncell Kenya Limited
114. Mobile Pay Limited

## **CATEGORY C**

### **CONTENT SERVICE PROVIDERS (CSP)**

1. Adtel Phone Company Limited
2. Advanta Africa Limited
3. Africa Online Limited
4. Africastalking (K) Limited
5. Africom Media Limited
6. Airtel Networks Kenya Limited
7. Airtouch Connections Limited
8. Aja Limited
9. Attain Enterprise Solutions Limited
10. Beats Creations Limited
11. Bell Western Limited

12. Bernsoft Interactive Limited
13. Better Short Messages Services
14. Beverly Technologies Limited
15. Billsoft Services Limited
16. Bison Infotech (K) Limited
17. Bitz IT Consulting Limited
18. Brandkey Marketing Limited
19. Business Value Partners Limited
20. Cable One Limited
21. Cashswift Limited
22. Cellink Limited
23. Cellnet Service Provider
24. Cellulant Kenya Limited
25. Ceva Limited
26. Challa Telecommunications Limited
27. Commcarrier Satellite Services Limited
28. Comtec Hosting Solutions Limited
29. Connect Media Interactive Company Limited
30. Contro-Tech Limited
31. Coretec Systems and Solutions Limited
32. Craft Silicon Limited

33. Data Impact Limited
34. Databit Limited
35. Datalex Limited
36. Digital Africa Services Limited
37. Digital Media Aggregator Limited
38. Digital Works Limited
39. EM Communications Limited
40. Enable-It Limited
41. Enfinite Africa Communication Limited
42. Envisage Multimedia Limited
43. Eskay Communications
44. Essar Telecom Kenya Limited
45. Etiket Solutions Limited
46. Finamann Solutions Limited
47. Flex Communications Limited
48. Flint East Africa Limited
49. For a Twenty Twelve Limited
50. Fourth Generations Networks Ltd
51. Frontier Informatics Limited
52. Frontier Optical Networks Limited
53. Frotcom E.A. Limited



54. Fulbrite Systems
55. Gamerswild Limited
56. Global Messaging Services Limited
57. Global Technologies Limited
58. Glocal Data Solutions Limited
59. HomeBoyz Entertainment Limited
60. Hotspot Two Five Four Limited
61. Industrial Technology Trading Company Limited
62. Infiniti Capital Limited
63. Infolink Communications Limited
64. Information Convergence Technologies Limited
65. Instaconnect Limited
66. Intellect Group Limited
67. Intelligent Contact Solutions Limited
68. Interactive Media Services Limited
69. Intergrat Limited
70. Internet Protocol Extreme Company Limited
71. Internet Solutions Kenya Limited
72. iWayAfrica Kenya Limited
73. Jambo Call And Information Centre Limited
74. Jamii Telecommunications Limited

75. Jet Telecommunications Services Network Ltd
76. Karibu Telecom Limited
77. Kasnet Internet Services Limited
78. Kenya Commercial Bank Limited
79. Kenya Data Networks Limited
80. Kenya Postel Directories Limited
81. Kenya School of Technology Studies Limited
82. Kenya Solid Limited
83. Kinde Engineering Works Limited
84. Klass Image Limited
85. Kundi Comms Kenya Limited
86. Lantech Africa Limited
87. Leopard Communications Limited
88. Liberty Afrika Technologies Limited
89. Linkers International Limited
90. Local Authorities Provident Fund
91. Lyle Kenya Limited
92. Magic Touch Technologies Limited
93. Magnum Limited
94. Metropolitan Teachers Sacco Ltd
95. MIS Solutions Limited

96. Mkononi Limited
97. Mobalert Kenya Limited
98. Mobikash Africa Limited
99. Mobile Pay Limited
100. Mobile Pay Limited
101. Mobile Platform Solution Limited
102. Mobile Strategies Limited
103. Mobile Zone Wireless Limited
104. Mokonge Limited
105. Nairobi Specialty Coffee Exchange Limited
106. Nairobinet (K) Limited
107. Nation Infotech Limited
108. National Council for Science & Technology
109. Newstech Africa Limited
110. Ngeria Managed Services Limited
111. Nia Moja Business Solutions (K) Limited
112. Olive Tree Media Limited
113. Onfon Media Limited
114. Online BIZ Kenya Limited
115. Onmobile Kenya Telecom Limited
116. Oyster Enterprises Limited

117. Pendo Media Limited
118. Philanthia Centre of Kenya Limited
119. Pillars Holdings Limited
120. Plus Point Limited
121. Prime Outdoor Network Limited
122. Procom (K) Limited
123. Qasiida Technologies Limited
124. Rainbow Network Solutions Limited
125. Rapid Communications Limited
126. Raven Limited
127. Reliance Courier Services Limited
128. Reward And Recognition Limited
129. Roamtech Solutions Limited
130. Safaricom Limited
131. Sea Submarine Communications Limited
132. Searchit Limited
133. Shujaa Solutions Limited
134. Siltech Systems Limited
135. Smart Pen Productions
136. Socialcom Limited
137. Solunet Business Solutions Limited

138. Source Code Limited
139. Spice Vas Kenya Limited
140. Sproxil East Africa Limited
141. Standard Chartered Bank Limited
142. Sunberry Communications Limited
143. Swift Global (K) Limited
144. Symbiotic Media Consortium Limited
145. Talanta Africa Media Telecommunication
146. Tangazoletu Limited
147. Tech Pitch Limited
148. Teleworth Communications Limited
149. Telkom Kenya Limited
150. Texteleza Solution Limited
151. The Standard Group Limited
152. Top Brands Limited
153. True Africa (K) Limited
154. Ubuntu ON Line Limited
155. Uchumi Supermarkets Limited
156. Ultinet Limited
157. Unique Global Ideas Limited
158. Urban IT Consulting Limited

159. Valleypoint Telecoms Limited
160. Virtual City Limited
161. Virtual Mobile Limited
162. Voice and Data Interactive Limited
163. Wabcom Technologies Limited
164. Wananchi Group (Kenya) Limited
165. Wasp Africa Limited
166. Web Tribe Limited
167. Xtranet Communications Limited
168. Zesa Future Limited