INFLUENCE OF ORGANIZATION FACTORS ON IMPLEMENTATION OF LEAN SIX SIGMA PROJECTS IN KENYA'S SERVICE SECTOR: CASE OF STANBIC BANK'S OPERATIONS DEPARTMENT

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A Research Project report Submitted In Partial Fulfilment for the Requirement of the Award of the Degree of Master of Arts in Project Planning and Management of the University of Nairobi

2018

DECLARATION

This research project report is my original work and has not been presented for any academic award in any university**.**

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This research project report has been examined with my approval as the supervisor.

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DEDICATION

This research project is dedicated to my parents, Mr. and Mrs. Nyamai Mbevi, My sister Patience Otieno and brothers Abednego, Timothy and Michael Mbevi.

ACKNOWLEDGEMENT

I would like to thank my supervisor Ms. Naomi Mutunga for her invaluable guidance and direction through this research project and for her patience with my learning curve and other engagements that competed for my time.

My special gratitude also goes to all my lecturers in the department of open, distance and e-learning campus, University of Nairobi for imparting knowledge that has gone a long way in the fruition of this document.

Special appreciation goes to the staff of Jomo Kenyatta library for being very helpful during literature review in making it easy to access relevant material in the various library resources.

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ABBREVIATIONS AND ACRONYMS

ANOVA:	Analysis of Variance
BPC:	Business Process Change
CTQ:	Critical to Quality
CVF:	Competing Values Framework
DMAIC:	Define, Measure, Analyze, Improve and Control
EAC:	East African Community
LSS:	Lean Six Sigma
NACOSTI:	National Commission for Science Technology and Innovation
NISTMEP:	National Institute of Standards and Technology Manufacturing Extension Partnership
NSE:	Nairobi Stock Exchange
SSA:	Sub Saharan African
TPS:	Toyota Production System

ABSTRACT

Lean six sigma is a combination of two powerful improvement methodologies, lean and six sigma. Though it promises a lot, the results so far however indicate that not all the organizations implementing the concept have achieved dramatic results. In East Africa, several organizations have implemented lean six sigma with varying levels of impact to their bottom line, with some even abandoning it prematurely. This research focuses on organisations factors influencing the implementation of lean six sigma projects at Stanbic bank's operations department. Four organisation factors will include communication, organisation culture, reward and recognition and top management commitment. Literature has been reviewed on the key thematic areas. The study was based on Womack and Jones framework on lean thinking published in 1996 and business process change theory by Antony *et al*. published in 2004.This research has adopted descriptive research design with a target on implemented lean six sigma projects at Stanbic's operations department. The target population is 138 staff in the operations department at Stanbic bank, where the researcher adopted a census for this study. The sample was categorized in three strata namely; Head of units, Unit managers and processing staff. A six level data collection questionnaire, comprising of open and closed questions was utilized. Content and Construct Validity of the research instrument was determined through a review of the questionnaire by an expert in lean six sigma and my supervisor. A pilot study was conducted on 13 individuals. Test re test was the method used to conduct the reliability test. Pearson product moment correlation coefficient (r) was employed to test reliability of the questionnaires which was found to be 0.8901 hence the questionnaires deemed to be reliable. Collected data was cleaned, coded, organized and analysed using SPSS software version 21 and descriptive and inferential statistics were used for analysis. It was found that if all other factors were held constant a unit increase in communication, the organisation's culture, reward and recognition and top management commitment would improve the effectiveness of lean six sigma implementation by 0.752, 487, 0.545 and 0.439 respectively. Thus, from the study, the researcher concludes that these four factors influence the implementation of lean six sigma projects where open communication and clarity of responsibilities being crucial aspects. The researcher recommends that in order to increase ownerships of the projects by employees, emphasis should be laid the benefits LSS projects will bring to the employees, competing value framework should be utilized in improving the department's culture towards one that is positive towards process improvement, reward and recognition should be predictable and pegged on the indicators identified by LSS projects and that top management should spend more time with LSS committees and allocate LSS projects adequate resources.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

The twentieth century will be remembered as the century of productivity, whereas the twenty first century will be known as the century of quality (Juran & Gryna, 1993). Today's organizations are forced to deal with an ever converging global market hence making it necessary for organizations develop capabilities in identifying new opportunities and sustaining superior performance. An external environment that is constantly changing in terms of increased competition, relatively unstable economic climates and more demanding customers, is facing organisations on a daily basis. When developing strategies of operations, firms that strive to survive in the turbulent competitive environment pay special attention to managing operations at the minimal cost possible, with superior accuracy and quickness and with enhanced capability to change and improve continuously (Hayes & Pisano, 1996; Ward & Duray, 2000; Voss, 2002; Datta & Roy, 2011).

The service sector has assumed an increased role in the global economy in the recent past decades; consequently, service quality has naturally become of important priority for organizations keen on differentiating their services in a highly competitive environment. Even though LSS (lean six sigma) has its origins in manufacturing, Heuvel, Does and De Koning (2002) acknowledges there is a growing recognition that LSS can equally be applied to non-manufacturing operation but at the same time notes the unique characteristics possessed by the service sector that distinguishes it from manufacturing making it tougher to apply LSS. George (2003) observes the great opportunities in the service sector in he's study that established the cost of services are inflated by 30–80% occasioned waste, that service functions have little or no history of using data in decision making and that and approximately 30–50% of the cost in a service organization is attributable to costs related to slow speed, or re-doing work to satisfy customer needs.

LSS is a relatively new concept in improvement approaches (Snee, 2010). LSS has been defined as a combination of two process improvement methodologies, Lean and Six Sigma. Antony, Kumar and Madu (2005) suggest combining the lean with six sigma methodologies and

implementing them as process improvement projects. De'Koning, Does and Bisgaard (2008) proposes a framework for the integration the two methodologies, entailing a project organization structure based on six sigma (black belts, green belts and champions), an extensive training programs in the DMAIC (Define, Measure, Analyse, Improve and Control) approach, with lean analysis tools and improvement models embedded. The goal being cutting down on variability and wastes in organization processes.

Increasingly, around the world, companies are promoting LSS in their processes and realizing the benefits of reduced costs and competitive advantages (George, Rowlands, Price, & Maxey, 2005; Brett & Queen, 2005; Edward & John, 2005; Caldwell, Brexler & Tom, 2005). The two philosophies had witnessed singular successes in a number of industries but their amalgamation provided a more energetic and improved philosophy with accompanying apparatus and methods (Pepper & Spedding, 2010). LSS brings together the waste elimination tools and means of lean with the variation reduction methods and components of six sigma (Anthony et al., 2005). LSS addresses aspects that could probably be ignored in case the two were applied separately (Salah Rahim & Carretero, 2010). The joint approach can simultaneously yield quality, cost, variability and result in time improvements.

Scholars in the recent past that have done studies in this area include; Kumar, Antony, Madu, Montgomery and Park (2008), who looks at the application of six sigma to improve a credit initiation process within financial institutions. Within the project, the DMAIC method has been applied, focusing especially on cause-and-effect diagrams and poka-yokes in improving the time it takes to appraise debtors. Mintel (2009) demonstrated how LSS can be used in streamlining the operations of the call centres by eliminating waste in processes and other non-value added activities from the processes such as; reducing the number of lost calls: six sigma's root cause analysis and hypothesis testing techniques can assist in determining the amount of time to spend on different type of calls, thus giving a guide to the operators. Better resources usage leading to reduced operating expenses for call centres. Disclosing the "hidden factory" determining the actual reasons, why clients call in the first instance often helps in exposing problems further up in the process channel thereby offering gains that transcend the call centre itself. Lowering employees' turnover ordinarily, the call centres witness a high turnover of employees, caused by extremely stressful working conditions. A better smooth-running system would help in bringing

down stress. Laureani and Antony (2012) demonstrates LSS can be also used to improve administrative processes, such as processes in the HR (human resource) Department.

In a Xerox publication titled Delivering measureable results our customers value, Chairman and chief executive officer Ursula Burns, acknowledges the role played by Six Sigma experts (Black Belts) in helping deliver to customers expert business process consulting and assessment services. They found ways to save customers' total documentation costs by up to 35% by leveraged on their IT and infrastructure investments. That had a big impact since document management costs usually took away 5-15% of a company's total revenue. Medtronic, an international leader in medical knowledge, was in receipt of enormous amount of unnecessary mail at the Tempe Campus. This resulted in time wasting in terms of sorting, retrieval and delivery of junk mails. The organization implemented in LSS system to minimize the massive, unnecessary in-coming mains to the campus with the aim of cutting expenses to improve productivity. Over the course of 13 months, this resulted in the elimination of administrative support activities that did not add value by 78% and 80% of mail centre support activities, as well as an 88.5% reduction in non-essential mail (Xerox Corporation, 2011).

Nevertheless, not all enterprises can profess to have had similar gains. In a research by Deloitte (2012), less than 10% of the firms are executing LSS to the degree remarkably affecting the balance sheet and the share price in worthwhile span of time. Porter (2002) and Rees (2007) point out the existence of several internal and external elements that could balance the effect of an LSS, a list of organizational factors that influences LSS implementation have been generated. In spite the absence of a particular universal list of these components, this study focuses on four organization factors which have frequently featured in LSS literature: communication, organization culture, rewards and recognition and top Management Commitment.

Douglas and Ochieng (2015) conclude, LSS is fast rising as a predominant strategy for quality improvement in East Africa with the most popular tools being Pareto diagram, scatter diagram, run charts and histogram. Taguchi practice, non-parametric tests and ANOVA are less poplar. The most regularly used tools and means are run charts, tally charts, Pareto diagram and histogram. The more appropriate statistical appliances are SPC control charts, Pareto diagrams

and run charts. The less favourable are found to be Taguchi methods, non-parametric tests and ANOVA.

Kenya is a leading sub-Saharan African (SSA) producer and exporter of services. It is a key services provider to the East African Community (EAC), which in addition to Kenya includes Burundi, Rwanda, Tanzania, and Uganda. As East Africa's distribution hub, telecommunications axis, and financial centre, Kenya has a broad array of well-developed services industries, with an abundance of services suppliers. These factors make Kenya a promising source of increased services exports. In addition, the government of Kenya is aiming to spur economic growth by promoting exports of services—including professional services, which are critical for Kenya's economic development and also serve as key inputs for economic growth in East Africa (Serletis, 2014).

Stanbic Bank is a corporate and retail bank licensed by the Central Bank of Kenya to provide banking services in the Kenyan economy. The bank is part of the Standard Bank Group a leading African financial services organization, which was founded more than 150 years ago and today has operations in 20 African countries and across the globe. Stanbic Bank (as part of Stanbic Holdings Plc.) is listed on the Nairobi Stock Exchange (NSE) and currently the seventh largest bank in Kenya. Stanbic Bank began implementing LSS projects in its operations department in the year 2014 with an aim to cut down on wastage and stabilize processes in the department .As at the time this report was compiled the department had successfully implemented14 LSS projects, 8 projects were underway and 6 were earmarked. The department had trained 46 of its staff in LSS implementation, most of whom are yellow and white belt certified, which is a middle level qualification in LSS implementation.

1.2 Statement of the Problem

Research in service has depicted a parallel between cost increase and quality decline witnessed in services and a similar trend initially found in the manufacturing (Quinn & Gagnon, 1986; Zeithaml, Valeri, Parasuraman & Berry, 1990). The similarity in these two sectors could be as a result of the common organizational and operational patterns found in service and manufacturing firms. Service organisations often replicate manufacturing organisations in the logic of mass-production, such as stern management control, lean task definition, less-skill and low paid

workers (Thompson, 2003 Slack, Chambers, Johnston & Betts, 2006; Johnston & Clark, 2005) . However, Allway &Corbett (2002) observe, increasing competitive pressures, customer demands and rising operational costs are beginning to force a paradigm shift of the management of operations in the service sector.

LSS is fast becoming an important quality improvement practice in East Africa. There are clearly benefits to be accrued from the implementation of such a strategy (Douglas, 2015). While it promises a lot, the outcome so far, however show that not all firms that have implemented the said concept have yielded positive results. Rather many of them abandoned their LSS initiative since it was not significantly contributing to the bottom line in any meaningful period of time. These contrasting results of LSS implementation pose some very serious questions pertaining factors that contribute to the successful implementation of LSS (Khan,2005).

Literature that deals with LSS implementation in the service industry has continued to grow. Hensley & Dobie (2005) proposes a conceptual model for assessing organizational LSS readiness and utilizes this model to analyze the readiness of a public transit company based on survey data. Chakrabarty and Tan (2007) examines the current state of six sigma application in services based on quantitative and qualitative analysis of the literature and identify critical success factors and key performance indicators as management guidelines for effective applications of six sigma in the service industry. Biolos (2002) prescribes ways of effectively implement six sigma in service organizations. Anthony (2006) posits six sigma factors of success; organizational culture change, election of team members and teamwork, strong leadership and management commitment, aligning six sigma projects to corporate business objectives, six sigma training, selection of projects and project management skills, understanding the DMAIC methodology, tools, techniques and key metrics, linking six sigma to customers, and accountability (matching outcome in financial aspects to the bottom line). Various studies have probed the success factors resulting from implementation of the six sigma in world-class companies (Anthony & Banuelas, 2002; Eckes, 2000; Anthony, 2006). Wessel and Burcher (2004), Athony (2006) and Fahmy (2006) address the use of LSS in small and medium firms and how they contribute to success. Anthony et al (2007) has reported the identified challenges, advantages and the critical success factors resulting from six sigma projects in service firms.

Although most literature in the implementation of LSS emanates from the United States, many other studies have focused on other countries. Chuang (2006) undertook in Taiwan, Wessel and Burcher (2000) – addressed Germany; Anthony (2007) researched in United Kingdom; Pheng and Hui (2004) studied Singapore; Kim (2006) did a study on South Korea.

In East Africa, a number of organization have adopted LSS with varying levels of impact to their organization's bottom line, with some such as Kenya Airways and World Vision International abandoning it prematurely. Limited research has been done on factors that influence the successful implementation of LSS in this region. This study focused on four organization factors that have been prominent a lot of LSS literature: communication, organizational culture, reward and recognition and top management commitment and how they influence the implementation of LSS projects in Kenya; Case of Stanbic Bank's operations department.

1.3 Purpose of the Study

The purpose of this study was to investigate the influence of four organization factors on implementation of LSS projects in the Kenya's service sector: Case of Stanbic Bank's operations department.

1.4 Objectives of the Study

The study was guided by the following objectives;

a. To determine how communication influences the implementation of Lean Six Sigma projects in Stanbic Bank's operations department.
b. To assess how organizational culture influences implementation of Lean Six Sigma projects in Stanbic Bank's operations department.
c. To determine how reward and recognition influences the implementation of Lean Six Sigma projects in Stanbic Bank's operations department.
d. To assess how top management commitment influences the implementation of Lean Six Sigma projects in Stanbic Bank's operations department.

1.5 Research Questions

The study was guided by the following questions;

a. How does communication influence the implementation of Lean Six Sigma projects in Stanbic Bank's operations department?
b. To what extend does Organizational culture influence the implementation of Lean Six Sigma projects in Stanbic Bank's operations department?
c. How does reward and recognition influence the implementation of Lean Six Sigma projects at Stanbic Bank's operations department?
d. To what extent does top management commitment influence the implementation of Lean Six Sigma projects in Stanbic Bank's operations department?

1.6 Significance of the Study

It is hoped this study will contribute to the growing body of knowledge on LSS projects and how the four organization factors studied influence its implementation in service organizations. Stanbic bank and other financial institutions can use the findings on this study in policy formulation to guide project and program managers involved in LSS implementation. It is also hoped this knowledge would be useful in informing future research towards factors that are critical to the successful implementation of LSS.

1.7 Limitations of the Study

The validity of the information obtained was largely depended on the objectivity of the respondents in answering the research items. The researcher was however not able to control the attitudes of the respondent as they attempt to answer various research questions. This is because the respondents may at times give socially acceptable answers which may affect the validity of the findings. In order to reduce the effect of subjectivity, document analysis was used to verify the information given by respondents. Similarly information on the same subject was collected from different kinds of respondents.

1.8 Delimitations of the Study

This study was delimited to of CFC Stanbic Bank's head office in Nairobi County. In addition, given that there are other organization factors that influence the implementation of LSS projects, for the purposes of this study, focus shall be on four organization factors that are common in LSS

literature around the world: communication, Organizational culture, reward and recognition and top management commitment.

1.9 Assumptions of the Study

The study assumed other organization factors not considered in this study did not have a significant effect on the implementation of LSS projects. It was also assumed that all respondents would cooperate in filling the questionnaires and provide honest and objective representation of facts.

1.10 Definition of Significant Terms

Communication: The process of sending and receiving information through words, signs or behaviours to exchange or express ideas, feelings or thoughts to other people.

Lean Six Sigma: An operations management concept that utilizes various tools to reduce waste and variation from processes with an ultimate view of impacting the organization bottom-line.

Organization culture: A design of beliefs, assumptions and values that shared across the board in an institution, which the members of the institution perceived as the truth and believe is the appropriate manner to solving obstacles.

Reward and recognition: Communication between management and employees which rewards them for archiving specific goals or high quality result. Recognition is meant to reinforce desirable behaviour. Reward evaluates and compensates employees based on their performance.

Top management commitment: The commitment of the top leadership of an organization (which may include Directors, chief executive officer, branch managers, department head and unit managers) towards the understanding, implementation and goals of LSS projects.

Implementation of LSS projects: project-based structures that merge tools and principles from both Lean and Six Sigma methodologies to improve business processes with the aim of maximizing shareholder value by improving quality, speed, customer satisfaction, and costs

1.11 Organization of the Study

The study is organized into five chapters. Chapter One discusses the background of the study in which the context and concepts are discussed. It also provides direction for the study by stating

the objective of the study, research questions, Significance of the study, limitations, delimitation and assumptions of the study. Chapter Two discusses the empirical and theoretical literature on organizational factors and how they influence LSS projects. It also discusses the theoretical and conceptual framework and the research gap. Chapter Three discusses, research design, target population, samplings size, sampling procedure, research instruments, data analysis and ethical considerations. Data analysis, data presentation and data interpretation is dealt with in chapter Four and finally chapter Five discusses and summarizes the research findings, draws conclusions and provides recommendations on areas of further research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of published literature that relates to the implementation of LSS, the organization factors under study and how they have influenced the implementation of LSS projects in organizations around the world. The organization factors include: communication, organization culture, reward and recognition and top Management Commitment. The review will anchor the study to a theoretical framework and identifies gaps in the empirical studies where conceptual framework is derived.

2.2 Implementation of Lean Six Sigma Projects

LSS is a process improvement methodology that improves speed, quality, customer satisfaction, and costs with a goal is to maximizing shareholder value. It does it by utilizing appliances and principles both six sigma and lean. This concept has been adopted globally in service and manufacturing enterprises and it has proved successful in some prominent enterprises such as General Electric and Motorola has formulated a copycat scenario with most institutions all over the world replicating this success (Laureani, 2010).

Lean and six sigma were both originally implemented in manufacturing settings and both improve process performance through a project-based structure. Ordinarily, LSS practitioners often organize improvement projects (also known as Kaizen events) that last one to five days. During this period, deliberate project structure that follows a prescribed sequence of steps is employed: Define, Measure, Analyze, Improve, and Control (DMAIC) (Maleyeff et al., 2012). A team of employees devote their attention to solving a pre-determined problem under the supervision of an experienced facilitator

Many companies, rather than choosing, develop both lean and six sigma simultaneously. It was inevitable that organizations would start to merge the two methodologies given their popularity. Although the evolution of the two methods was separate and distinct, combining them has offered companies many advantages. Lean brings action and intuition to the shop floor and allows employees to make quick improvements through kaizen events. It boosts productivity,

changings culture, and cleans up a factory. Six sigma on the other hand utilizes statistical tools in uncovering root causes and provides metrics as progress markers. Six sigma programs are popular, focused, and effective, but projects often take months to finish. Combining the two approaches has allowed organizations to reap the benefits of both approaches leading to ongoing business improvement (Pojasek, 2000).

LSS has gained wide spread popularity as a methodology for improving both factory output and quality. The approach boosts product quality to not more than 3.4 defects per million opportunities and assist organizations create leaner operations. LSS has delivered significant improvements and cost savings at companies as diverse as General Electric Co., Dell Inc., Xerox Corp., and Johnson & Johnson. (Guarraia, 2007). Mayor Graham Richard of Fort Wayne, Indiana, upon his election in 2000, led a LSS effort. The result was savings estimated at 11 million dollars, with no tax increases but increases in citizen satisfaction. The mayor attributed his 16-percentage-point re-election in 2004 to enhanced customer service (Arnheiter 2005).

2.2.1 Implementation of Lean

Lean has its roots in the Toyota Production System. It focuses on reducing the time that elapses between a customer's order and the shipment of the product or the provision of the service that fills the order. This is achieved through the elimination of waste from production processes, with the definition of waste being anything that is not necessary to produce the product or service. The results of this is more agile and market-responsive company with reduced costs and cycle time (Pojasek, 2000). The U.S. Department of Commerce's National Institute of Standards and Technology Manufacturing Extension Partnership (NIST MEP) defines lean as ;a systematic approach to identify and eliminate waste (non-value added activities) through continuous improvement by flowing the product only when the customer needs it in pursuit of perfection.

Karlsson and Ahlstrom (1996) observes, the implementation of lean utilizes a variety of tools and techniques that are commonly refers to as "building blocks" .These vary from consultant to consultant and from company to company, however the most common ones include: Poka-Yoke, Lean Baseline Assessment, Pull Scheduling, Quick Changeover, Five S, Cellular Design, "Critical Mass" Training, Visual Controls, Kaizen, Kaizen Teams and Value Stream Planning.

Five lean principles stressed by Womack and Jones (1996) which to date constitute the sequence of implementation include; From the customer's perspective Specifying what does and does not create value; highlight activities that add no value by identifying the necessary procedures to craft, order and produce the resultant product throughout the whole value system; make those actions that create value flow without interruption, detours, backflows, waiting or scrap ; only make what is pulled by the customers just-in-time; and strive for perfection by continually removing successive layers of waste as they are uncovered.

Womack and Jones (1996) also suggested for a prominent role in lean improvement in the service sector and various authors and researchers have concurred with their message for lean adoption in services (Abdi *et al*., 2006; Atkinson, 2004; Corbett, 2007; May, 2005; Ehrlich, 2006). Over the years, researchers have produced empirical evidence proving Lean thinking can be applied to service sector as well. Case studies include insurances, airlines, fast food restaurants and hospitals (Bowen & Youngdahl 1998; Swank 2003; Åhlström 2004) and reports of cost savings of 15% to 25% and lead-time reductions (Goland *et al*. 1998). However, a closer look at these examples for Lean services reveals significant limitations. First, most cases refer to manufacturing-like repetitive service processes that have been described as mass services (Johnston & Clark 2008), with no evidence for Lean implementation in professional services. Second, some case studies are based on ex-post rationalization. For instance, Bowen and Youngdahl (1998) assert that Southwest Airlines and the Shouldice Hospital – both well-known through Harvard Business School case studies – maintain Lean operations. While it might be true that some of their operational principles closely resemble Lean thinking, neither of the both organizations has announced that it pursues Lean implementation. Third, even where service companies deliberately embarked on the Lean journey, their application of Lean principles and methods often remains superficial and fragmented. E.g. Swank's (2003) case on application processing in an insurance company does not go beyond process standardization. Fourth and similar, in all reported cases, Lean implementation remained limited to bits and pieces of the company's value chain.

Bowen and Youngdahl (1998) presented Taco Bell fast-food chain as an example of lean implementation in services. Results were described as based on trade-offs between efficiency

and operations with low cost and flexibility, thus increasing human resources management and focus on customer and on quality. Swank (2003) demonstrated how Applying the principles of lean production in an insurance company(Jefferson Pilot Financial Insurance) improved its operation and increased revenues, reduced order processing time by 70%, labour costs by 26%, and error reduction around 40%. Leite (2012) observes, the improvements, reductions and gains are not only financial results when applying the principles of lean service, but also positive reflections on quality perceived by clients. In a case study of the Life Care Hospital, infections caused by transfusion reduced by 70%. There were also gains for the Hospital "Pólo do Pé Diabético" that eliminated unnecessary movements of patients, combined flexibility and efficiency, reduced processing time with improved quality and productivity. Piercy and Rich (2009) empirically demonstrated the validity of the lean approach in a pure service environment. Barraza *et.al*., (2000) presents empirical findings from research undertaken in three local councils in Spain who applied certain elements of lean thinking and kaizen concept with the overt intention of improving their processes and levels of service to the communities they served while Chakraborty and Chuan (2013) explores the issues highlighted by the service organizations during Six Sigma implementation in Singapore.

2.2.2 Implementation Six Sigma

Six sigma is an approach to management that continually reduces defects in the organization therefore improving the organization's processes, products and services. It focuses on better understanding of what the customer requires and improving business systems, productivity and financial performance .Since the mid 1980's through the application of six sigma, many organizations have sustained their competitive advantage by integrating their knowledge of the process with statistics, engineering, and project management (Anbari, 2002).

Six Sigma can also be defined as a term for process performance that produces 3.4 defects per million opportunities (DPMO) which is the closest anyone can get to perfection (Harry, 1998). Any unintended outcome such an incorrect customer bill or a faulty part is referred to as a defect (Paul, 1999).Six sigma focuses on reducing possibility in variation from the actual processes and resultant products by using a method known as DMAIC that ensures continuous improvement (Khan 2005).

DMAIC works by breaking down a specific improvement project into phases. This is known as the DMAIC methodology; defined as Define, Measure, Analyze, Design, and Control. This methodology guides the improvement project team from the onset of the project (define) to ensuring the archived improvements are sustained (Control).Important in the implementation of six sigma is that the performance target applies to a single characteristic which is referred to as a critical-to-quality characteristic (CTQ) (Harry & Schoeder, 2000).It is this single critical-to-quality characteristic that is the goal of Six Sigma not the total product.

The success companies such as Motorola and GE have had in their manufacturing operations have proven that six sigma can be used to improve both process and product quality. These successes provoked a copycat effect even is service industries. George (2003), observes many authors have advocated the implementation of six sigma methodology in service sectors. However, there are some differences that should be taken into account when the methodology is transferred to the service sector. These differences notwithstanding, an analysis of relevant publications, citations and references by Chakrabarty and Tan (2007) reveals that Six Sigma is finding beneficial application in service industries. The recent past has seen the use of Six Sigma in service industries such as education (Bandyopadhyay & Lichtman, 2007), health care (Burge, 2008; Barry *et al*., 2002; Buck, 2001), call centres (Hensley &Dobie, 2005), and the financial services industry (Antony, 2006).

There has been an increase in six sigma research in the recent past. According to McAdam and Lafferty (2004), for successful implementation of six sigma, attention needs to be accorded to both the process perspective (methodology) and people perspective (behaviour). While previously research on six sigma had focused primarily on the technical side of six sigma in terms of tools, technique and methodology, later studies have paid attention to the psychological, contextual and human side of six sigma such us reward system for six sigma (Buch &Telentino, 2006), and goal setting (Linderman, Liedkte & Choo, 2006), organizational context (Choo, Linderman & Schroeder, 2007a) and psychological safety (Choo, Linderman &Schroeder, 2007b). Six sigma has been traditionally focused on cost reduction and efficiency; however recently studied have shown that it could be used as a methodology to increase profitability (Sodhi & Sodhi, 2005) and it could drive creativity, enhance organizational learning (Wiklund &

Wiklund, 2002) and facilitate innovation(Byrne, Lubowe & Blitz,2007).In terms of performance variation ,the human side of six sigma exhibits the highest level of variation between different groups in the company (Fleming, Cofman & Harter,2005). In addition, it requires top management commitment and a highly disciplined approach and training (Hahn, Doganaksoy & Hoerl, 2000).

2.3 Communication and Implementation of Lean Six Sigma

In any continuous improvement initiative, open communication is essential to its successful implementation. Communication by management forms an important backbone of any continuous improvement effort. Employees on the other hand require transparency form management and their continuous empowerment and education on the change process. LSS should be viewed as a precursor to producing more responsive supply chains through communication leading to strategic alliances and visibility (Pepper & Spedding, 2009). LSS projects results should be assessed frequently and communicated effectively with an aim of keeping the projects focused on the goals of cost reduction, waste elimination and reducing the variability in the processes (Zhang et al., 2012).

Ordinarily Six sigma initiatives start with a top management idea for archiving excellence and outstanding results. Whatever the source of the idea, it starts with communication among top management or employees. Similarly constant communication must be maintained within the organization thought the implementation of six sigma. Since six sigma requires great improvement in a short period of time, in order to develop creative improvement solutions, intellectual involvement of relevant employees is essential (Gupta, 2005).

Communication is the aspect that sticks together the tiles of the total quality process propelling the principle of people-based management (Kanji & Asher, 1993). It is crucial for reaffirming enthusiasm in quality practices in an institution, overcoming resistance to management initiatives and driving the workforce to achieve the corporate goals. Communication that is not distinct or coherent results in employees addressing pertinent issues which are irrelevant in the organization. Training sessions to improve the comfort levels of staff and communication of both the why and how of six sigma as early as possible is critical (Hendericks & Kielbaigh, 1998). The two basic fears that arise in Cultural Revolution brought by the six sigma are fearing change

and the fear of not being able to meet the new standards. It is important to develop a communication master plan that addresses the significance of the six sigma quality and how the system operates (Zhang et al., 2012).

First understand the change is central to people facing cultural change and challenges due to the six sigma implementation .It is therefore necessary to have clear channels of communication and a communication plan to motivate individuals to overcome resistance together with education of and educating managers, employees, and customers on the benefits of six sigma. Announcing the results of six sigma projects including successes, obstacles, and challenges will help future projects to avoid making similar mistakes and adopt only the very best practices (Kwak & Anbarib, 2004).

Hoerl (2001) asserts the importance of training as a communication technique of ensuring managers and employees implement the complex six sigma techniques effectively. Relevant staff need to be kept up to date with the latest trends, tools and techniques of six sigma

Laureani *et al*. (2010) emphasize the importance of employees' informal communication while Antony (2011) has found good communication as very important in LSS concept application. Communication skills and communication are also notified as important factors by Hilton & Sohal (2012), while Ginevičius & Vaitkūnaite (2006) have found communication as the most frequently cited and analyzed dimension of organizational culture. While Sadikoglu and Zehir (2010) concludes, there will be more employee satisfaction and less absentees if employees have different skills and information feedback, which are the cornerstones of effective management practices.

2.4 Organization Culture and Implementation of Lean Six Sigma

Sigler and Pearson (2000), defines organization culture as patterns of beliefs, values and assumptions shared by an organizing's staff. These patterns is seen by the staff as the valid and correct way to solve problems .they bind staff together and become a sought of strategy through which the organization archives its goals (Marcoulides & Heck, 1993).

Goffnett (2004) Observes, today's literature offers little empirical research examining the influence of organization culture to the implementation of six sigma. Nevertheless organization

culture is recognized as having some effect on the success of quality improvement initiatives within organizations. Waldman (1993) notes; the philosophy and policies of managing a business are shaped by its staff's values and opinions of the organization's culture, which in turn influences the development of quality improvement initiatives. Organization culture is has been found to influence the effectiveness of change required for six sigma deployment in an organization (Quinn & Rohrbaugh 1981). Antony and Banuelas (2002) identifies organization culture as one of the key components essential for successful implementation of six sigma, while Breyfogle *et al*. (2001) suggests organizations should first evaluate their current culture using tools such as force field analysis in identifying forces that influence the organization towards the implementation of six sigma and those limiting six sigma implementation. Management should then come up with strategic plans to intensify the drivers and overcome the limiting forces

Lean was imported to the rest of the world from its origins in the Japanese culture. Therefore it is Important to understand the requirements of that culture thoroughly for successful adoption and implementation of lean. Lean has its origin from Japanese culture and then imported to the rest of the world; it is therefore important to recognize that lean culture needs to be understood thoroughly for successful adoption and implementation. As a consequence of globalization nothing seems to be confined to one country anymore. Different parts of the world such as Eastern Europe, the Asia region, Latin America, India and Middle East have adopted lean and other quality management techniques form Japan and western countries. National and organization cultures of each of these regions is different and unique, therefore in order to successfully deploy lean, each region needs to find a feasible and appropriate way if implementation it by aligning its organization culture to the Japanese corporate culture(Lacksonen *et al*., 2010).

Quinn and Rohrbaugh (1981) developed the competing values framework (CVF) to describe the believes and values underlying and organization culture. A lot of literature have utilized this framework in examining organizational culture such as (Denison & Spreitzer, 1991; Henri, 2004; Quinn & Kimberly, 1984; Quinn & McGrath, 1985; Zammuto & Krakower, 1991). Quinn and Kimberly (1984) note that the value orientation in CVF can be utilized to uncover the deep structures of organization culture on motives, compliance, leadership, effectiveness, decision making and organization forms in the organization. Therefore, this framework has the ability to

organize the different patterns of shared values and assumptions that make up the organization's culture (Denison & Spreitzer, 1991).

2.5 Rewards and Recognition and Implementation of Lean Six Sigma

Six sigma goals need to be properly internalized in order to truly change behaviour over the long term. Towards this end, human resources-based strategies need to be put in place to promote desired behaviour and results. According to Harry and Schroeder (2000) studies have shown that 61% of the top performing companies link their reward to their business strategies, while lower performing companies create minimal linkage. Rewards and recognition are the most significant stages in the quality improvement system (Cosby, 1989). These are the enablers that ensures maximum employees capability and involvement, in so doing, they become the major contributors to the firm's sojourn to quality attainment (Johnston & Daniel, 1991).

LSS projects are directly impacted by the creation of a reward and recognition system. However small, reward and recognition could be what motivates a staff member to participate in quality improvement projects. Involvement of staff members has been found to be impacted the greatest by financial rewards. Group rather than individual reward is more ideal as creation of individual reward whilst promoting involvement may attract undesired competition which may be detrimental to LSS projects. There is perception that LSS is detrimental to careers. However the opposite is true. Black Belts working on LSS projects tend to leap into leadership roles that might otherwise be a difficult placement. The judgment of who most deserving of a reward or recognition is one thing to be careful about when coming designing a reward and recognition system. Biased, unbalanced and inaccurate selections will often end up in undesired outcome for quality improvement s projects which could derail the organizations commitment to improving quality (Johnston & Daniel, 1991).

Objective measures of a reward and recognition system that include quality, response time and cost have a crucial role in the implementation of six sigma. Even though such objective measures are difficult to quantify, successful companies have found creative approaches to inspire employees .Motorola for instance used a total customer satisfaction team competition and a CEO award for extraordinary accomplishment. Publicizing success breeds success, more employees

are inspired to success by recognition of others Companies can measure and make public a number of projects with exceptional improvement or significant savings (Gupta, 2005).

Some guidelines on reward and recognition include: Management should not use reward and recognition to manipulate employees. Management should not use reward and recognition to get employees to perform a task they are not already performing. This only passes conflicting massages form management to workers. Reward and recognition is not salary, to have a significant impact, reward and recognition must represent a significant fraction of a worker salary in order to be effective; recognition must not make it seem like token from more important people (manager) to less important people (workers).Positive reinforcement is not always a good model for recognition. Recipients of reward and recognition do not always perceive the same cause effect relationship between reward and behaviour as the manager criterion by intend; Employees should not believe that reward and recognition are based primarily on luck. This manifest in cynicism among employees, they will be able to tell when the manager says one thing and does another; Reward and Recognition meets a basic human need, it plays an important function in the workplace of meeting the need for a sense of belonging and self-esteem. In Maslow's hierarchy of needs, self-actualization needs such as pride in work, personal growth and feelings of accomplishments cannot be met until self-esteem needs are satisfied; Recognition programs should not create winners and losers. One group or individual should not be recognized over and over while others are never recognized. This creates a static ranking system, with all of the problems discussed earlier, therefore besides goal attainment, effort should be rewarded and recognized as well (Carder & Clark 1992). Manager should be develop the ability to measure and recognize accomplishment in a wide variety of behaviours such as time management ,discipline, skill management ,morale ,participation and communication (Imai,1986).

HR professionals can help tackle the challenge of establishing the ideal rewards/recognition program. Potential HR contributions in this area include: Analyzing existing compensation arrangements to identify the extent to which those arrangements will support the Six Sigma initiative, creating a strategic compensation plan that will better support Six Sigma, Developing a non-monetary reward program for Six Sigma teams (Johnston & Daniel, 1991).

2.6 Top Management Commitment and Implementation of Lean Six Sigma

Haliday (2001) observes, engagement and commitment by management is central to the implementation of LSS in any organization. The commitment of chief executive officers and directors towards the understanding, implementation and goals of LSS has the greatest influence on whether it succeeds or fails. The outcome of any company wide and result oriented initiative like LSS without serious management engagement and commitment will be in doubt. Urdhwareshe (2004) notes that organizations that have implemented and practice LSS agree that the most important success factor is top management support. The top executive must have totally bought into the idea. He or she must change the agenda in executive meetings so that quality is right near the top. Top management commitment is often mentioned in lean literature as a major reason for why some companies fail in implementing lean, and as a prerequisite for implementation success (Barraza & Pujol, 2010). Leadership and related issues are mentioned as enablers or inhibitors of lean implementation success in almost every academic and practitioner paper published in the field (Suárez-Barraza & Ramis-Pujol, 2010).

Ittner and Larcker (1997) reiterates, the adoption of process management techniques is bound for failure if it lacks management support and commitment. Managers have a role to play in creating enthusiasm and motivating workers to ensure the implementation of LSS run effectively and smoothly at all time. Executive commitment has also shown to have a direct or indirect link with financial or operating performance in relation to quality management endeavours (Kaynak, 2003; Powell, 1995, Adam *et al*., 1997). However, according to Sim and Rogers, (2009) some lean implementation efforts fail even with commitment by top management. This raises questions of whether leadership commitment is enough or whether there be a certain type of leadership which suites successful implementation of LSS. Urdhwareshe (2004) points out some indicators that demonstrate that demonstrate the extent to which management is committed to the implementation of LSS; how much time top management spends for steering committee to drive implementation, review projects selection and closures, extend help realizing the need, Leading and/or sponsoring Six Sigma projects. This is a very strong message to the organization that the management means business

Lawrence Bossidy, former CEO of AlliedSignal ensured that company remained competitive by implementing Six Sigma quality and achieving 7% year-over-year productivity (Minahan, 1997).

Jack Welch, GE's CEO, while introducing Six Sigma initiative, said that it "is the only initiative he will introduce, but it will be introduced everywhere" When the employees tried to dismiss Six Sigma as the program of the month, Welch changed the business structure at a corporate level to underscore the importance of the goal (Murdoch,1998). Thus the top management should support the Six Sigma initiative by personally spending time in every Six Sigma training, speaking and answering questions raising by employees, dropping in (usually unannounced) on Six Sigma reviews, making site visits to observe at first-hand the degree to which Six Sigma is ingrained in the culture; and monitoring Six Sigma project progress weekly through summary reports from the tracking database and monthly reviews with the master black belt team (Henderson & Evans, 2000).

2.7 Theoretical Framework

This study will be anchored in two theoretical frameworks, Womack and Jones framework on lean thinking published in 1996 and Grover & Kettinger's Business process change theory published in 1995.

Lean Thinking: Banish Waste and Create Wealth in Your Corporation by P. Womack and Daniel Jones looks into the evolution of Toyota corporation and investigates what sets it apart in the industry and made a comparison with Ford automobile company of America. This piece of work on lean formed a basis on which many other researchers have built their work on lean thinking on. The framework grounds and develops the context of lean on which this study will be built. Through its TPS (Toyota Production System) reference, the study is able to pick fundamental elements that address both independent and dependent variables studied herein.

BPC (business process change) was initially proposed by Grover and Kettinger (1995), and subsequently enhanced by Kettinger and Grover (1997). It is an approach to management that involves any type of change. It can also be defines as a strategy driven initiative by the organization to redesign business processes to archive significant improvements in performance in areas such as cost, responsiveness, flexibility, quality, shareholder value, satisfaction and other critical process measures. This is archived through changes in the relationship between information, technology, management, organization structure and people (Kettinger & Grover, 1997). BPC by definition includes both continues (evolutionary) and radical (revolutionary)

approaches such as total quality management (TQM) and business process reengineering (BPR) (Grover *et al*., 2000; Grover & Markus, 2008; Sarker *et al*., 2006).

2.8 Conceptual Framework

A conceptual framework represents a graphical presentation of the relationship between the independent and the dependent variables. It also contains other variable that influence this relationship. However, for the purposes of this study, these other variables will not be tested but will be highlighted using a dotted line to indicate that the relationship between the dependent and independent variables are not linear but are also influenced by other factors as depicted in figure 1.

The interrelationships between the study variables are conceptualized in figure 1

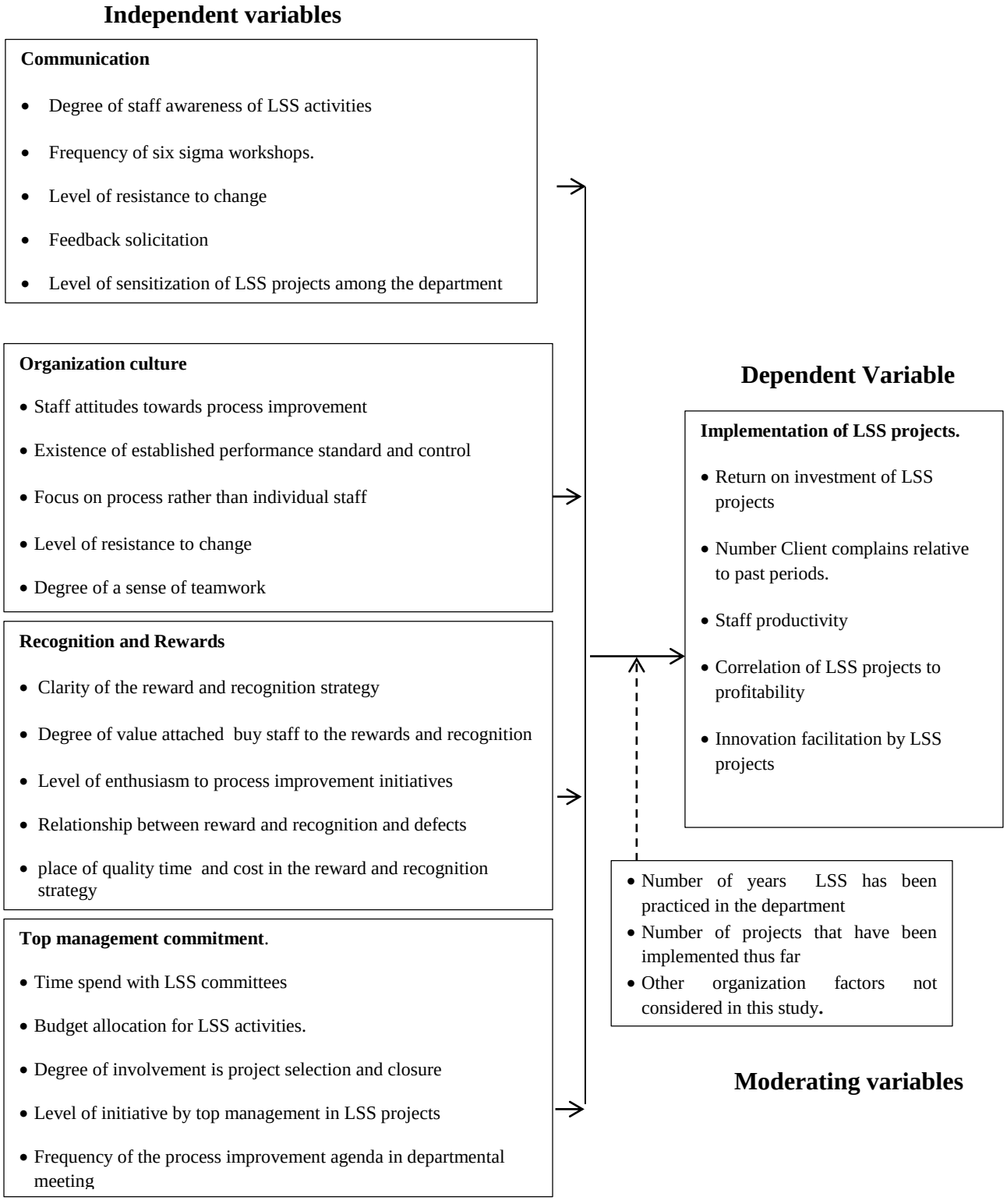

Figure 1: Conceptual framework

2.9 Research Gap

The research observed the gaps identified in the literature review as shown in Table 2.1 below;

Table 2.1: Research gap

Variable	Author (s) and Year	Findings	Knowledge gap
Effective Communication	Obaidullah Hakeem Khan, 2005.	Communication is critical to overcome resistance to Six Sigma and maintain enthusiasm for quality initiatives within the organization. A communication plan addressing the importance of LSS quality and how the method works should be developed and implemented to drive out two basic fears at individual levels: fear of change and fear of not measuring up to the new standards.	How to involve all stakeholders in developing a communication plan
Organization culture	Mohammad Nazaripour; Shahoo Maaznezhad, 2012.	Critical to successful implementation of LSS is recognizing that organizations are not trait by only one culture type; rather they have a culture profile consisting of different culture types. The implications of the research suggests the necessity of creating a comprehensive culture environment that may reflect multiple and competing types (e.g., the group culture and the rational culture).	The viability of effectively achieving balance among different culture types in one organization and to provide an understanding of the complexities of Maintaining the balance.
Rewards and recognition	Obaidullah Hakeem Khan, 2005.	Rewards and recognition are enablers which maximize employees' potential and involvement.	How to effectively administer reward and recognition without disgruntling the unrewarded potential performers that could lead to demotivation
Top Management Commitment	Qun Zhang (Corresponding Author), Muhammad Irfan, Muhammad Aamir Obaid Khattak, 2012.	The survey showed that the organizations consider top management commitment a primary success factor in implementation of LSS within the organization.	How to influence informal group leadership to embrace and champion LSS initiatives

Implementation of lean six sigma in Kenya's service sector	Thomas Gachie, 2015.	The main positive factors that emerged due to LSS Implementation in Kenya's service sector (National bank Operations Division) include positive change in operational culture, improved turnaround time in operation processes, high leadership commitment that linked to organizational strategy, reduction in error rate across operation, strong LSS champion involvement that lead to great improvement in process flows and efficiency in project management..	How to leverage on critical success factors to effectively identify waste and quality improvement opportunities

2.10 Summary of Literature Review

This chapter has reviewed work done by other authors on implementation of LSS projects. It has reviewed work on four critical success factors that influence LSS's implementation including communication, organizational culture, reward and recognition and top management commitment. The theoretical and conceptual frameworks of this research on are also discussed. Chapter two concludes by identifying research gaps on the area of implementation of LSS

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains description of research design, target population, sample size and sampling procedure, research instruments that includes, pilot testing, validity and reliability, data collection procedures, data analysis techniques, ethical issues and operational definition of variables.

3.2 Research Design

This study employed descriptive research design to assist in an in depth analysis of the influence of organization factors in the implementation of LSS projects in Stanbic Bank's operations department, Nairobi county. Descriptive research refers to research studies that have as their main objective the accurate portrayal of the characteristics of persons, situations or groups (Polit & Hungler 2004). Further the design describes the interrelationships between the independent and the dependent variable. It was the easiest and most convenient due to time and cost limitations (Robson, 1993).

This design was appropriate for the study topic since it allowed for obtaining of factual information, data collection and analysis, relation of research variables and will enable the generalizing of the findings to a large population.

3.3 Target Population

The target population of the study was all 138 staff that worked for Stanbic Bank's operations department according to Stanbic bank's budget head count for March 2017 report. They comprised of head of units, unit manager, team leaders and processing staff as depicted in Table 3.1.

Table 3.1: Target population

Designated role	Population size	% of total
Head of Units	7	5
Unit managers	17	12
Team leaders and processing staff	114	83
Total	138	100

3.4 Sample Size and Sampling Procedure

The study adopted Census, where the entire population was considered for the study. This is because the researcher deemed the target population a manageable small size for the survey. The sample was divided into three strata namely; Head of units, Unit mangers and team leader & processing staff. The strata were informed by the department's hierarchy .Although similar information was derived from the various strata the questions were structured slightly differently for appropriateness

3.5 Research Instrument

Questionnaires were the main instrument used in primary data collection. Secondary data however was obtained from various books, published reports, journals and the internet. The questionnaires comprised both closed and open ended questions and was organized into six sections; Section A had questions concerning the respondent's personal information. Section B had questions concerned with the influence of communication to the implementation of LSS projects, Section C had questions concerned with the influence of organizational culture to the implementation of LSS projects, section D had questions concerned with the influence of reward and recognition to the implementation of LSS projects, section E had questions concerned with the influence of top management commitment to the implementation of LSS projects and finally section F which had questions concerning the implementation of LSS projects. The questionnaire had Likert's scales rated; (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

The study adopted the questionnaire as its data collection instrument of choice as opposed to interviews and focus groups due to cost and time constraints limitation on the study .The respondents were requested to fill and return the questionnaires in a weeks' time .The questionnaire was also appropriate in collecting data of both qualitative and quantitative nature.

3.5.1 Pilot Study

A section of the targeted population was chosen to participate in a pilot study whose objective was to ensure clarity and inform feasibility and identify modifications needed in the design of the questionnaire. Since the researcher used test re test method, the individuals used for the study were also included in the main study. The pilot study was carried out on 10% of the sample size which was 13 respondents from each stratum as recommended by Baker (1994). On completion

of the pilot questionnaires, they were reviewed and changes made to improve comprehension, sequence and right wordings.

3.5.2 Validity of the Instrument

A valid instrument is one which measures what it is supposed to measure (De Vellis 2003). Content validity measured if questions were easily comprehensible, clear, not wordy and not too long, and when these elements were confirmed, the questionnaire passed validity test. Construct on the other hand attempted to obtain new knowledge on the influence of the independent variables on the dependent.

Haynes, Richard, & Kubany (1995) defines content validity as the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose. While construct validation is involved whenever a test is to be interpreted as a measure of some attribute or quality which is not operationally defined. Upon completion of the pilot study, content and construct validity was assessed with the assistance of a LSS expert and my project supervisor

3.5.3 Reliability of the Instrument

Reliability measures the degree to which a measurement technique can be depended upon to secure consistent results upon replication (Weiner, 2007). Reliability can also be defined as the measure of the degree to which a research instrument fields consistent results or data after repeated trials Mugenda and Mugenda, (2003). A test re-test techniques was employed to ensure reliability of research instruments. The instrument was administered to thirteen respondents at first and after a period of two weeks, the instruments were again administered to the same respondents, and results from the two sets of instruments were analyzed using Pearson product moment correlation and a margin of 0.80 an indicator that the research instrument was reliable, according to Mugenda and Mugenda, (2003). A coefficient of 0.8 or higher was accepted. Here reliability was obtained by correlating the scores of each questionnaire. Pearson product moment correlation coefficient (r) was employed to test reliability of the questionnaires which was found to be 0.8901 hence the questionnaires were to be considered reliable since the value for the coefficient of reliability (Re) was closer to 1.0; getting consistent responses when the same question will be posed to the same respondent more than once.

3.6 Data Analysis

Orodho (2002) defines data analysis as the examination of collected data and making deductions and inferences through decoding and organization. Data is disintegrated into manageable parts and synthesized to create logical and relatable patterns. Upon return of the questionnaires, collected raw data was cleaned, edited, coded and tabulated. Descriptive statistics such as percentages ,mean and standard deviations was used to analyze quantitative data gathered from closed ended sections of the questionnaire .The strength of the relationship between dependent and independent variables was determined using inferential statistics.

The analysis utilized SPSS version 21 software owing to its various advantages, for instance; the capability to organize data in tabular format, saving distinct outputs and files, creating graphical displays from menus and syntaxes that make presentation easy and interesting, extensive menus with captions to direct new users, handling multiple data, and identifying errors in outputs.

3.7 Ethical Considerations

The researcher obtained a research permit from NACOSTI, Nairobi Regional Coordinator of Education and a letter from the university as prove that data collected is for exclusively academic purposes. A transmittal letter informing the respondents of the purpose of the research and assuring them of their confidentiality was also presented before data was collection and no names were required in the questionnaires.

Table 3.2: Operational definition of variables

Objectives	Type of Variable	Indicators	Measurement Scale	Methods of data collection	Data Collection tools	Data analysis techniques
To assess the extent to which communication influences the implementation of LSS projects in Stanbic Bank's operations department	communication (Independent variable	• Degree of staff awareness of LSS activities • Frequency of six sigma workshops.	Ordinal	Administering questionnaire	Questionnaire	Descriptive and inferential statistics
To assess the extent to which organizational culture influences the implementation of LSS projects in Stanbic Bank's operations department	organizational culture (Independent variable)	• Degree of compliance with organizational polices. • Level of interaction between leadership and staff. Degree of labour efficiency	Ordinal	Administering questionnaire	Questionnaire	Descriptive and inferential statistics
To assess the extent to which reward and recognition influences the implementation of LSS projects in Stanbic Bank's operations department	reward and recognition (Independent variable)	• Number of employees rewarded periodically. • Degree of value attached buy staff to the rewards • Level of enthusiasm /resistance to LSS initiatives	Ordinal	Administering questionnaire	Questionnaire	Descriptive and inferential statistics

To assess the extent to which top management commitment influences the implementation of LSS projects in Stanbic Bank's operations department	top management commitment (Independent variable)	• Time spend with LSS committees in a week. • Budget allocation for LSS activities. • Degree of involvement is project selection and closure	Ordinal	Administering questionnaire	Questionnaire	Descriptive and inferential statistics
	Implementation of LSS(dependent variable)		Ordinal	Administering Questionnaire	Questionnaire	Descriptive and inferential statistics

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents data that was analyzed in order to give a clear picture of the findings and for purpose of comparison with the expected findings. The purpose of the study was to examine the influence of organization factors in the implementation of LSS projects in Kenya's service sector: case of Stanbic Bank's operations department. The data was collected using questionnaire and summarized in table form. This chapter is organized into: the instruments return rate; demographic information; an analysis and interpretation of the four organization factors influencing the implementation of LSS projects at Stanbic Bank's operations department under study and the dependent variable; implementations of LSS projects.

4.2 Instruments Return Rate

This refers to the number questionnaires that were duly filled and returned to the researcher for analysis. According to Ary et al. (2006), for the results to reflect all the characteristics of the population, the research instrument return rate should be at least 85.0% so as to allow for a permissible margin of error due to non-response. The return rate for this research is as presented in Table 4.1.

Table 4.1: Respondents designated role

Designated role	Population size	respondents	% of total
Head of Units	7	6	5.0%
Unit managers	17	12	9.9%
Team leaders and processing staff	114	103	85.1%
Total	138	121	87.7%

The total response rate was 87.7% thus the findings had allowable levels of non-response errors. The rate of return was perhaps affected by a number of factors, including; some respondents being away on annual leave, the respondent's busy schedule given the questionnaires were issued towards the end of the month when the department's workload surges, length of the questionnaire and the content of the information required by the researcher.

4.3 Demographic Information

The study sought to establish information of respondents including role in the organization, work experience in the department and levels of education.

4.3.1 Respondent's Distribution of Designated Roles

The Respondents were requested to fill in their designated role in the organization. The results are as summarized in table 4.2.

Table 4.2: Distribution in respondents designated roles

Designated role	Respondents	% of total
Head of Units	6	5.0%
Unit managers	12	9.9%
Team leaders and processing staff	103	85.1%
Total	121	100.0%

Team leaders and processing staff formed the bulk of respondents. They are involved first hand in the day-to-day implementation of six sigma projects in the department, indicating that their responses would be credible. Head of units and unit manager's responses added insight and perspective to the study.

4.3.2 Respondent's Years of Experience

The duration of the years worked was important in finding out whether the respondents have had adequate interaction with LSS projects that have been undertaken in the operations department.

Table 4.3: Respondent's number of years worked

Years	Respondents	% of total
More than three	69	57.0%
Between one and three	33	27.3%
Less than one	19	15.7%
Total	121	100.0%

From Table 4.3, it can be deduced that majority of the respondents, 57.0%, having been with the department for more than three years and have had adequate interaction with the implementation of LSS projects in the department. 27.3% have been with the department for a period between one and three years and therefore have a reasonably good knowledge and experience LSS projects and 15.7 could be considered in the induction stage of the department's processes and

process improvement projects. Therefore, a good percentage of the respondents were conversant with the LSS implementation in the department and information provided by them as assumed credible.

4.3.2 Respondent's Level Education

Respondents were asked to indicate their highest level of education**.**

Table 4.4: Respondent's level of education

Education level	Respondents	% of total
University	118	97.5%
Tertiary	3	2.5%
Secondary	0	0.0%
Primary	0	0.0%
Total	121	100.0%

From the findings, a majority of 97.5% of the respondents had attained university level education and 3 with tertiary education. This is attributable to the nature of the job and recruitment criteria .A majority of the employees therefore appreciated to essence of the research instrument and likely provided credible information.

4.4 Communication and Implementation of LSS Projects

The first objective of the study was to determine how communication influences the implementation of LSS projects in Stanbic Bank's operations department. Respondents were asked to rate the extent to which they agreed or disagreed with the various statements related to the influence of communication to the implementation of LSS projects.

4.4.1 Familiarity with the LSS Concept

Respondents were asked to indicate the degree to which they are familiar with the LSS concept. The findings are tabulated in Table 4.5

Table 4.5: Respondent's familiarity with the LSS concept

Level of familiarity	respondents	% of total
High	111	91.7%
Average	6	5.0%
Low	4	3.3%
Total	121	100.0%

91.7% considered themselves highly familiar with LSS, 5.0% average and 3.31% had low familiarity of LSS implementation. This implies that majority of the respondents are aware on the concept of LSS which is likely due to the sustained drive by the department to improve its processes thus LSS is likely a frequent subject in the departments meetings .

4.4.2 Degree of Competence in LSS Implementation

Respondents were asked to indicate their level of competence in implementing LSS projects. Findings are shown in Table 4.6.

Table 4.6: Respondent's degree of competence in LSS implementation

Degree of competence	Respondents	% of total
High	46	38.0%
Average	23	19.0%
Low	52	42.9%
	121	100.0%

From the findings, a majority of 42.9% respondents indicated that their degree of competence in implementing LSS projects was low. This is expected as a majority of staff had not received LSS training.38.0% that indicated high degree of competence have yellow and white belts certification in LSS which is middle level training in LSS. While the 19.0% that indicated average level of competence are likely staff who are not trained in LSS but are experts in specific subject matters and are therefore involved in LSS committees in identifying problem areas and possible solutions. These staff also assist in testing any changes to systems or processes.

4.4.3 Communication

The respondents were asked to rate different statements related to communication within the department on a likert scale rated between 5-strongly agree to 1-strongly disagree. The findings are as shown in Table 4.7.

Table 4.7: Communication

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
LSS workshops are sufficiently regular	0%	4.96%	3.31%	76.03%	15.70%	4.02	0.36
The significance of LSS projects in department in clear to all	0.88%	1.75%	10.53%	75.44%	11.40%	3.95	0.36
There is little or no resistance to the implementation of LSS projects in the department	11.57%	14.88%	33.88%	30.58%	9.09%	3.11	0.29
Views and feedback on the implementation of LSS are proactively sought after	5.79%	10.74%	14.05%	46.28%	23.14%	3.7	0.32
change in roles occasion by implementation of LSS projects is embraced by affected individuals	15.70%	8.26%	37.20%	32.23%	6.61%	3.06	0.29

Likert scale; 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly agree

There was a general agreement with a mean of 4.02 and a standard deviation on 0.36 that the LSS workshops were sufficiently regular. This likely explains why respondents somewhat agreed with a mean and standard deviation of 3.95 and 0.36 respectively that the significance of LSS projects in the department was clear to all and also that views and feedback of LSS projects was proactively sought after with a mean of 3.7 and standard deviation of 0.32. Respondents were however neutral on the question of whether change in roles occasioned by LSS projects was embraced by affected individuals with a mean 3.06 and a standard deviation of 0.29 .This logically ties-in with respondent's neutrality by a mean of 3.11 and a standard deviation of 0.29 when asked whether they agreed that there was no resistance to the implementation of LSS projects in the department

4.5 Organization Culture and Implementation of LSS Projects

The second objective of the study was to determine how organization culture influences implementation of LSS projects in Stanbic Bank's operations department. Respondents were

asked to rate the extent to which they agreed or disagreed with the various statements related to the influence organization culture to the implementation of LSS projects.

4.5.1 Respondents Readiness for Change

The respondents were requested to rate the level to which the organization's culture had conditioned them to change orientation .The responses are tabulated in Table 4.8.

Table 4.8: Level of staff change orientation

Level of change orientation	respondents	% of total
High	37	30.58%
Average	66	54.55%
Low	18	14.88%
	121	100.00%

From the findings,14.9% attributed their change preparedness to the organization's culture and 14% did not see any role played by the organization culture in conditioning them for change, 54.6% of the respondents rated average the role played by the organization's. Breyfogle *et al*. (2001) suggested that organizations should evaluate their current culture with tools such as force field analysis to identify the forces that manage the organization toward LSS implementation and those controlling a Six Sigma implementation.

4.5.2 Organization Culture

The respondents were requested to rate different statements related to organization culture within the department on a likert scale rated between 5-strongly agree to 1-strongly disagree. The findings are as shown in Table 4.9

Table 4.9: Organization culture

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
The pattern of Stanbic's values, believes and assumption are ones that embrace change.	1.65%	5.79%	26.45%	37.19%	28.93%	3.65	0.34
Staff attitudes towards process improvement initiatives are generally positive.	3.31%	12.40%	23.14%	45.45%	15.70%	3.58	0.31
The time it takes to accomplish various tasks in the department is established and deviations are consistently tracked.	0.00%	8.26%	5.79%	9.92%	76.03%	4.54	0.42
Defective task output often draws attention to the processes rather than individuals.	1.65%	5.79%	4.96%	55.37%	32.23%	4.11	0.37
Members of the department have a strong sense of shared responsibility for task accomplishment	0.83%	11.57%	16.53%	58.68%	12.40%	3.7	0.32

Likert scale; 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

Respondents were in strong agreement that there was a culture of establishing standard in task performance and a persistent effort to track deviations from the standards and that whenever there was defect in task performance, attention was drawn to the processes rather than individuals with mean of 4.54 and 4.11 and standard deviations of 0.42 and 0.37 respectively. Respondents also somewhat agreed that there was a culture of embracing change and that staff attitudes towards process improvement initiatives was generally positive with means of 3.65 and 3.58 and standard deviations of 0.34 and 0.31 respectively. Finally, respondents had a week agreement there existed a strong sense of teamwork with a mean of 3.1 and a standard deviation of0.32.

4.6 Reward and Recognition and Implementation of LSS Projects

The third objective of the study was to determine how reward and recognition influences implementation of LSS projects in Stanbic Bank's operations department. Respondents were asked to rate the extent to which they agreed or disagreed with the various statements related to the influence reward and recognition to the implementation of LSS projects.

4.6.1 Value Attached to Reward and Recognition Provided

The respondents were requested to indicate how much they valued the form or quantity of reward and recognition provided to them following good performance. The findings are as tabulated in table 4.10.

Table 4.10: Value attached to reward and recognition

Value	respondents	% of total
High	36	29.8%
Moderate	71	58.7%
Low	14	11.6%
	121	100.0%

A 58.7% majority of the respondents indicated the value they attached to reward and recognition given to them was moderate. 29.8% and 11.6% indicated a high and low value attachment respectively. This may suggest some staff, probably managers, are highly rewarded and/or recognized, most are moderately rewarded and a few, who are likely junior staff, modestly rewarded and/or compensated.

4.6.2 Enthusiasm toward Process Improvement Initiatives

The respondents were requested to rate their enthusiasm towards process improvement initiatives in the department and the findings are in table 4.11

Table 4.11: Enthusiasm toward process improvement initiatives

Level of enthusiasm	respondents	% of total
High	53	43.8%
Moderate	47	38.8%
Low	21	17.4%
Total	121	100.00%

From the findings, 43.80% asserted that enthusiasm towards process improvement initiative in the department is high. Whereas 38.84% and 17.36% contended that the enthusiasm is moderate and low respectively.

4.6.3 Reward and Recognition

The respondents were requested to rate different statements related to reward and recognition within the department on a likert scale rated between 5-strongly agree to 1-strongly disagree. The findings are as shown in Table 4.12

Table 4.12: Reward and recognition

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
The department's reward and recognition criteria are linked to the bank's overall strategy.	1.65%	12.40%	19.01%	57.02%	9.92%	3.61	0.31
The department's reward and recognition criteria have desirable impact on the frequency of deviations from set standards.	0.00%	4.96%	20.66%	60.33%	14.55 %	3.83	0.33
Department staff are sufficiently enthusiastic about process improvement projects.	5.79%	4.13%	35.54%	38.84%	15.70 %	3.55	0.31
Quality, time and cost are central to the department's reward and recognition strategy.	3.31%	12.40%	10.74%	61.16%	12.40 %	3.67	0.32
The departments' reward and recognition criteria is well understood by all	5.79%	7.44%	33.06%	46.28%	7.44%	3.42	0.3

Likert scale; 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

There was a week agreement that on the linkage between the departments reward and recognition criteria and banks the overall strategy with a mean 3.61 and a standard deviation of 0.31.Similartly, an agreement with a mean of 3.83 and a standard deviation of 0.33 also exist between the departments reward and recognition criteria and deviations from established

performance standard. The centrality of quality, time and cost to the department's recognition strategy also had a week agreement among respondent with a mean of 3.67 and a standard deviation of 0.32. On the questions of enthusiasm to process improvement and the appreciation of the reward and recognition criteria, a week agreement with means of 3.55 and 3.42 were indicated respectively.

4.7 Top Management Commitment and Implementation of LSS Projects

The fourth objective of the study was to determine how top management commitment influences implementation of LSS projects in Stanbic Bank's operations department. Respondents were asked to rate the extent to which they agreed or disagreed with the various statements related to the influence of top management commitment to the implementation of LSS projects. The findings are as shown in Table 4.13.

Table 4.13: Top management commitment

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
Top management appears to lead from the front on matters concerning process improvement.	1.65%	3.31%	23.97%	63.64%	7.44%	3.72	0.32
Adequate resources are allocated to six sigma projects	4.13%	7.44%	32.23%	42.15%	14.05%	3.55	0.31
Process quality improvement is a frequent agenda in department's meetings.	4.96%	4.96%	12.40%	41.32%	36.36%	3.99	0.35
Top management spends adequate time in LSS committees.	0.00%	9.92%	25.62%	52.62%	11.57%	3.66	0.32
Head of operations makes frequent site visits to inspect the state of LSS implementation	1.65%	11.57%	19.01%	64.46%	3.31%	3.56	0.31

Likert scale; 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

There was an agreement among respondents with mean of 3.72 and 3.99 and standard deviations of 0.32 and 0.35 that top management appeared to lead from the front on matters concerning process improvement and that process quality improvement was a frequent agenda in the department's meetings. Similarly respondents seemed to somewhat agree that adequate resources are allocated to six sigma projects, top management spend adequate time in LSS committees with mean of 3.55 and 3.66 and standard deviations of 0.31and 0.32 respectively.

4.8 Implementation of LSS Projects

The study's dependent variable was the implementation of LSS projects .Respondents were asked to rate the extent to which they agreed or disagreed with the various statements related to the implementation of LSS projects in Stanbic Bank's operations department.

4.8.1 Return on Investment of LSS Projects

The respondents were asked to rate their opinion of how much they thought the time, money and effort invested in LSS projects paid off to the Bank(return on investment). The findings are as shown in Table 4.14.

Table 4.14: Return on investment of LSS projects to Stanbic bank.

ROI	respondents	% of total
High	61	50.4%
Moderate	55	45.5%
Low	5	4.1%
	121	100.0%

On return on investments, the findings indicate that the majority of the respondents 50.41 asserted that the return is high whereas 45.45% and 4.13% contend that the return is moderate and low respectively. A big majority agreed implementing LSS produced a moderate to high return on investment.

4.8.2 Implementation of LSS Projects

The respondents were also requested to rate the statements on the implementation of LSS projects in order the researcher could be able to measure the dependent variable. The findings are as shown in table 4.15

Table 4.15: LSS implementation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
There has been a measurable decline in customer dissatisfaction since the inception of LSS in the operations department.	0.00%	3.31%	15.70%	73.55%	7.44%	3.85	0.34
Employee productivity has improved since the inception of LSS.	0.00%	0.00%	9.92%	85.12%	4.96%	3.95	0.35
The service rendered by the operations department to internal customers has improved since the inception of LSS.	0%	4.96%	3.31%	76.03%	15.7%	4.02	0.36
LSS's implementation in the operation's department has a correlation to the bank's profitability.	0.83%	14.88%	30.58%	42.15%	11.57%	3.49	0.3
The implementation of LSS has facilitated innovation in the department	5.74%	10.76%	13.04%	48.29%	22.177%	3.7	0.3

Likert scale; 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

A majority of the respondents with mean of 3.95 and 3.85 and standard deviation 0.35 and 0.34 respectively indicated that employee productivity has improved since the inception of LSS and that there has been a measurable decline in customer dissatisfaction since the inception of LSS in the operations department respectively. Similarly, respondents agreed that the implementation of LSS had facilitated innovation and improved service delivery in the department, with mean of 3.7 and 4.2 and standard deviations of 0.3 and 0.36 respectively. However, respondents were neutral on the question as to whether LSS implementation had a correlation to banks profitability with a mean of 3.49 and a standard deviation of 0.3.

4.9 Regression Analysis

In addition, the researcher conducted a multiple regression analysis so as to test relationship among variables (independent) on the influence of organization factors on Implementation of LSS projects. The researcher applied the statistical package for social sciences to code, enter and compute the measurements of the multiple regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Implementation of LSS projects) that is explained by all the four independent variables (Communication, Organization culture, Recognition and Rewards, and Top management commitment).

Table 4.16: Pearson correlation matrix

		Implementation of LSS Projects	communication	Organization culture	Recognition and rewards	Top management commitment
Implementation of LSS projects	Pearson Correlation	1				
	Sig. (2-tailed)	.				
communication	Pearson Correlation	0.721	1			
	Sig. (2-tailed)	0.025	.			
Organization culture	Pearson Correlation	0.492	0.533	1		
	Sig. (2-tailed)	0.013	0.009	.		
Recognition and rewards	Pearson Correlation	0.568	0.628	0.587	1	
	Sig. (2-tailed)	0.031	0.016	0.023	.	
Top management commitment	Pearson Correlation	0.424	.495	0.720	0.520	1
	Sig. (2-tailed)	.035	.008	.005	0.011	.

Table 4.16 represents the relationship between communication, organization culture, rewards and recognition and top management commitment on implementation of Lean Six Sigma projects. The factors were computed into single variables per factor by obtaining the averages of each factor. Pearson's correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed. The Table indicates the correlation matrix between these factors with a positive relationship within these variables. The factor that highly influence the implementation of these projects is communication 0.721, recognition and rewards 0.568, organization culture 0.492 and lastly top management commitment 0.424. From the results it is clear that with proper communication, clarity on employee expectations and suitable feedback mechanisms is important for the success of the implementation of Lean Six Sigma projects

4.9.1 Model Summary

Table 4.17: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.919	0.845	0.789	0.6273

The four independent variables studied have on influence of 84.5% on how well LSS projects are implemented as represented by the R^2. This therefore means that other factors not studied in this research contribute 15.5% to how well LSS projects are implemented at Stanbic's operations department. Therefore, further research should be conducted to investigate the other factors that influence the implementation of LSS projects.

4.9.2 ANOVA Results

Table 4.18: ANOVA of the Regression

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	88.19	4	22.05	9.475	.000[a]
	Residual	269.93	116	2.327		
	Total	**358.12**	**120**			

The significance value is 0.000 which is less than 0.05 thus the model is statistically significant in predicting how communication, organization culture, recognition and rewards, and top management commitment affect the Implementation of LSS projects. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant.

4.9.3 Coefficient of Determination

Table 4.19: Coefficient of determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.147	0.2235		5.132	0.000
	Communication	0.752	0.1032	0.1032	7.287	.000
	Organization culture	0.487	0.3425	0.1425	3.418	.000
	Recognition and Rewards	0.545	0.2178	0.1178	4.626	.000
	Top management commitment	0.439	0.1937	0.0937	4.685	.000

Multiple regression analysis was conducted as to determine the extent to which organization factors influence implementation of LSS projects. As per the SPSS generated table below, regression equation

($\mathbf{Y} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$) becomes:

($Y= 1.147+ 0.752X_1+ 0.487X_2+ 0.545X_3+ 0.439X_4$)

According to the regression equation established, taking all factors into account (Communication, Organization culture, Recognition and Rewards, and Top management commitment) constant at zero, Implementation of LSS projects will be 1.147. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in Communication will lead to a 0.752 increase in Implementation of LSS projects ; a unit increase in Organization culture will lead to a 0.487 increase in Implementation of LSS projects , a unit increase in Recognition and Rewards will lead to a 0.545 increase in Implementation of LSS projects , while a unit increase in Top management commitment will lead to a 0.439 increase in Implementation of LSS projects .

This infers that Communication contribute most to the Implementation of LSS projects followed by leadership strategy. At 5% level of significance and 95% level of confidence, communication, Organization culture, Recognition and Rewards and Top management commitment were all significant, in Implementation of LSS projects.

CHAPTER FIVE
SUMMARY OF THE FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the summary of the findings, discussions, conclusions, recommendations in relation to the influence organisation factors have on the implementation of lean Six Sigma projects in Stanbic Bank's operations department.

5.2 Summary of the Findings

The finding of this study has been summarized as follows:

5.2.1 Communication and Implementation of Lean Six Sigma Projects

Communication at Stanbic Bank's operations department is considered reasonably effective, with a majority of 91.7% being familiar with the LSS concept and 80.2% having at least an average level of competence in implementing LSS projects. A majority of respondents indicated LSS workshops were sufficiently regular in the department with a mean 4.1 and standard deviation of 0.36. Respondents agreed that the significance of LSS in the department was clear to all and that views and feedback on implementation of LSS projects was proactively sought with a mean of 3.95 and 3.7 and standard deviation of 0.36 and 0.32 respectively. However, respondents were neutral to the questions whether change in roles occasioned by the implementation of LSS were embraced by affected individuals and whether there was little or no resistance to the implementation of LSS projects with a mean of 3.06 and 3.11 respectively and a standard deviation of 0.29 for both questions.

5.2.2 Organizational Culture and Implementation of Lean Six Sigma Projects

54.55% of respondents rated as average the role played by the organization's culture in their preparedness for change while 30.38 % and 14.88% rated as high and low respectively the role of organization culture in their change orientation. There was a strong agreement of the existence time standards and controls in task accomplishment and focus on process rather than individual staff performance with means of 4.54 and 4.11 and standard deviations of 0.42 and 0.37 respectively. There was also agreement, though not as strong, on the questions as to whether there existed strong teamwork, whether attitudes to process improvements were generally

positive and whether their organization culture was one of embracing change with means 3.7, 3.58 and 3.65 and standard deviations of 0.32, 0.31 and 0.34 respectively.

5.2.3 Reward and Recognition and implementation of Lean Six Sigma Projects

58.7% of respondents attached moderate value to the form/quantity of reward and recognition given to them, 29.8% and 11.6% attached high and low value respectively.43.8% had high levels of enthusiasm towards process improve initiatives while 38.8 and 17.4 had moderate and low levels respectively. With means of 3.61 and 3.83, and standard deviations of 0.31 and 0.33, respondents agreed the department's reward and recognition criteria was linked to the organization's overall criteria and that the criteria had a desirable impact on deviations from set standards. Similarly, there was an agreement that quality, time and cost were central to the department's reward and recognition strategy and that staff were sufficiently enthusiastic about process improvement initiatives with means of 3.67 and 3.55 and standard deviations of 0.32 and 0.31 respectively. However, to the question as to whether the reward and recognition criteria was well understood by all, respondents were neutral with a mean of 3.42 and standard deviation of 0.3.

5.2.4 Top Management Commitment and Implementation of Lean Six Sigma Projects

Respondents agreed that management appears to lead from the front and that process improvement was a frequent agenda in the departments meetings with means 3.72 and 3.99 and standard deviations of 0.32 and 0.35 respectively. Respondents also agreed, though not as strongly, that adequate resources were allocates to implementing LSS projects, that top management spends adequate time in LSS committees and that head of operations makes frequent site visits to inspect the state of LSS projects with means of 3.55,3.66 and 3.56 and standard deviations of 0.31,0.32 and 0.31 respectively.

5.2.5 Implementation of Lean Six Sigma Projects

50.4% of respondents felt LSS had a high return in investment to the bank .While 45.5% and 4.1% thought there was an average and low return of investment by LSS to the bank. Respondents agreed there had been a decline in customer dissatisfaction, that employee productivity had improved and that the department's service provision had improved with means of 3.85, 3.95 and 4.02 with standard deviations of 0.34, 0.35 and 0.36 respectively. Similarly respondents agreed with a mean 0f 3.7 and a standard deviation of 0.3 that LSS implementation

had facilitated innovation in the department. However respondents were neutral to the whether they thought implementing LSS projects had correlations to banks profitably with a mean of 3.49 and a standard deviation of 0.3.

5.3 Discussion of Key Findings

This discussion was guided by the by the variables under study as follows:

5.3.1 Communication and Implementation of Lean Six Sigma Projects

A total of 83.8% of respondents had a reasonable level competence of implementing LSS projects. Also there was a general agreement with a mean of 4.02 and a standard deviation on 0.36 that the lean six sigma workshops were sufficiently regular. Hoerl (2001) observed, training and workshops are part of the communication techniques to make sure that manager and employees apply and implement the complex LSS techniques effectively. Participants need to be well informed of the latest trends, tools, and techniques of LSS. A mean of 3.95 and standard deviation of 0.36 indicated an agreement the significance of implementing LSS projects was clear all in the department, at the same time the department was proactive about collecting feedback from participants of LSS projects with a mean of 3.7 and a standard deviation of 0.32.Frequent communication and assessment on the LSS projects results is necessary to keep the projects focused on the goals of cost reduction, waste elimination and reducing the variability in the processes(Zhang et.al 2012).However despite communication being frequent, questions can be raised concerning the effectiveness of these communication in the department. With a mean of 3.06 and a standard deviation of 0.29 respondents were not decisively assertive on the issue of their embracing of change in roles occasioned by LSS implementation. Similarly, with a mean of 3.11 and a standard deviation of 0.29 respondents were neutral about there being minimal or no resistance within the department to the implementation of LSS projects. Hendericks & Kelbaugh (1998) observes communication is a means of overcoming resistance to management initiatives and maintaining enthusiasm for quality initiatives within an organization. The study revealed the importance of communication in the implementation of LSS. All other factors were held constant, a unit improvement in communication would improve the effectiveness of LSS implementation by 0.752.

5.3.2 Organizational Culture and Implementation of Lean Six Sigma Projects

Organizational culture is recognized as having an influence on the effectiveness of quality management implementation. The values and opinions of an organization's culture are able to shape its philosophy and policies of managing business, which in turn influence the development of quality management practices (Waldman, 1993).Mean of 4.54 and 4.11indicate there has been a deliberate effort by the department to adjust the department's culture to allow effective LSS implementation by setting standard, controlling performance and focusing on processes rather than individual performance. Though with some reservation there also was an elements of willingness to embrace change and a positive attitude towards process improvement with means of 3.65 and 3.58 respectively. Team work was wanting with mean of 3.1 and standard deviation of 0.32. Lacksonen *et al*., (2010) observes, regions are different and unique in terms of organizational culture and national culture; therefore, in order to accomplish successful LSS, each region needs to have appropriate and feasible ways of implementing it in line with its organizational culture and the Japanese corporate culture. The study brought out the importance of communication in the implementation of LSS. All other factors were held constant, a unit improvement in the organisation's culture would improve the effectiveness of LSS implementation by 0.48.

5.3.3 Reward and Recognition and Implementation of Lean Six Sigma Projects

Reward and recognition are part of the enablers which maximizes employees' potential and involvement and, in doing so, become one of the main contributors to the company's journey to quality (Johnston & Daniel, 1991).A majority of the respondents 58.% indicated the value they attached to reward and recognition given to them was moderate.29.8% and 11.6% indicates a high and low value attachment respectively. This may suggest some staff (probably managers), are highly rewarded and recognized, most are moderately rewarded and a few (who are likely junior staff) modestly rewarded and/or compensated. Carder and Clark (1992) list the following guidelines and observations regarding recognition: Recognition is not compensation. The award must represent a significant portion of the employee's regular compensation to have significant impact; Recognition should not be carried out in such a manner that implies that people of more importance (managers) are giving something to people of less importance (workers); Just because the manager is using a certain behavioural criterion for providing recognition, it doesn't mean that the recipient will perceive the same relationship between behaviour and recognition.

There was observed a week agreement that the departments reward and recognition criteria was linked the bank's overall strategy with a mean 3.61 and a standard deviation of 0.31.To ensure synergy and streamlining individual efforts towards a common goal, organizations should articulate a clear linkage between reward/ recognition and the organization's overall strategy .A study by Harry and Schroeder (2000) reveals, 61% of the top performing companies link their reward to their business strategies, while lower performing companies create minimal linkage (Harry & Schroeder 2000).

A week agreements with means of 3.55 and 3.42 was indicated on enthusiasm to process improvement projects and the appreciation of the reward and recognition criteria respectively were indicated. Carder and Clark (1992) notes employees should not believe that recognition is based primarily on luck which is an early sign of this is cynicism. A parallel can be drawn between the week agreement among respondents (mean 3.67,standard deviation 0.32) that quality, time and cost were central to the department's reward and recognition strategy and the agreement (Mean 3.8,standard deviation 0.33) that the department's reward and recognition criteria had a desirable impact on the frequency of deviations from desires performance. Gupta (2005) acknowledges the significant role played by recognition and rewards, with all the objective measurements for quality, response time and cost in successful LSS implementation. The study underscored the importance of an elaborate reward and recognition system to the implementation of LSS. All other factors were held constant, a unit improvement in reward and recognition would improve the effectiveness of LSS implementation by 0.545.

5.3.4 Top Management Commitment and Implementation of Lean Six Sigma

There was general agreement among respondents with a mean of 3.72 and a standard deviation of 0.32 that top management appears to lead from the front on matters concerning process improvement Top management commitment is often mentioned in lean literature as a major reason for why some companies fail in implementing lean, and as a prerequisite for implementation success (Barraza & Pujol, 2010).

Urdhwareshe (2004) points out that while management will claim that they are fully committed, there are some clear indicators whether the management means this; how much time top management spends for steering committee to drive implementation, review projects selection

and closures, extend help realizing the need, Leading and/or sponsoring Six Sigma projects. This is a very strong message to the organization that the management means business.

There was agreement that process quality improvement was a frequent agenda in department's meetings, that adequate resources were allocated to six sigma projects, and that top management spend adequate time in lean six sigma committees with a mean of 3.99, 3.55 and 3.66 and a standard deviation of 0.35, 0.31 and 0.32 respectively. Ittner and Larcker (1997) observes, without commitment and support from management, the adoption of process management techniques is bound for failure as this project dedication ensures teamwork and induces continuous improvement efforts. Managers have the power to create enthusiasm and motivation among employees and see that the implementation process runs smoothly and effectively at all times. The study brought out the importance of an elaborate reward and recognition system to the implementation of LSS. All other factors were held constant, a unit improvement in top management 'commitment would improve the effectiveness of LSS implementation by 0.439.

5.3.5 Lean Six Sigma Implementation

(Laureani, 2010) observes, LSS aims to maximize shareholder value by improving quality, speed, customer satisfaction, and costs by merging tools and principles from both Lean and Six Sigma. A 95.9% majority of respondents indicated LSS had an average to high return on investment with a mere 4.1 suggesting a low return on investment.

A majority of the respondents with a mean of 3.95 and 3.85 indicated that employee productivity has improved since the inception of lean six sigma and that there has been a measurable decline in customer dissatisfaction since the inception of Lean six sigma in the operations department respectively. With a mean of 3.49 and 3.4 the respondents further somewhat agreed that lean six sigma implementation in the operations department has a positive correlation to the organization's profitability and it has also facilitated innovation in the department. Also, with a mean agreement of 4.02 and a standard deviation of 0.36 respondents indicated that the services rendered by the operations department to internal customers have improved since the inception of lean six sigma.

5.4 Conclusion of the Study

The researcher found out that most organizations had initiated the use of lean management but very few are actually implementing these techniques. While some organizations assert the failure of continuing with this technique is there seems to be no direct financial benefits, others contend that the vision bearer of the system is no longer spear heading the organization and hence the dream of lean management dies.

In Stanbic, management have seen the tremendous value addition of their services by adopting lean management in its operations, where majority of the respondents contend that communication is crucial to the facilitation of the process then recognition and rewards for employees who are involved in the process and organization culture and top management commitment as the least of the factors. Thus, from the study, the researcher concludes that these four factors influence the implementation of Lean Six sigma projects where open communication and clarity of responsibilities being crucial aspects.

5.5 Recommendations of the Study

1. During training and workshops, while focusing on the technical aspects of LSS implementation, specific benefits LSS projects will bring to the employees should equally be emphasized. This way, staff are more likely to embrace and own LSS projects therefore increase the effectiveness of the changes occasioned by LSS projects
2. Competing value framework (CVF) should be utilized to organize the different patterns of shared values and assumptions that make up the department's culture and strategies formulated of improving the department's culture towards one with a larger sense of shared responsibility and one that is positive towards process improvement initiatives.
3. Reward and recognition should be structured in a manner that is predictable by staff and anchored on the indicators of the organisation's processes leanness and stability.
4. Together with spending more time in LSS committees, top management should allocate adequate resources to LSS projects.

5.6 Suggestion for Further Studies

1. Effectiveness and efficiency of the holders of black belts and green belts in implementation of Lean six Sigma projects

2. External environmental factors that influence lean management in project implementation
3. Comparison on lean management factors between manufacturing and service industry

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APPENDICES

APPENDIX I: UNIVERSITY INTRODUCTION LETTER

UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

17th November, 2016

REF: UON/CEES/NEMC/25/020

TO WHOM IT MAY CONCERN

RE: JOSEPH GODWIN KINYAMASYO - REG NO L50/79843/2015

This is to confirm that the above named is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing Master of Arts in Project Planning and Management.

He completed his course work and is currently working on research project.

Any assistance given to him will be appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE

UNIVERSITY OF NAIROBI C E E S
P.O. Box 30197
16 NOV 2016
NAIROBI
NAIROBI EXTRA MURAL CENTRE

APPEDIX II: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. GODWIN KINYAMASYO MBEVI
of UNIVERSITY OF NAIROBI, 76095-508
Nairobi,has been permitted to conduct
research in *Nairobi County*

on the topic: *THE INFLUENCE OF ORGANISATION FACTORS IN THE IMPLEMENTATION OF LEAN SIX SIGMA IN KENYA'S SERVICE SECTOR PROJECTS: CASE STANBIC BANK KENYA'S OPERATIONS DEPARTMENT.*

for the period ending:
18th September,2018

.....
Applicant's
Signature

Permit No : NACOSTI/P/17/68191/19035
Date Of Issue : 19th September,2017
Fee Recieved :Ksh 1000

.....
Director General
National Commission for Science,
Technology & Innovation

APPENDIX III: NAIROBI REGIONAL COORDINATOR OF EDUCATION AUTHORISATION

Republic of Kenya

STATE DEPARTMENT OF BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

Ref:RCE/NRB/GEN/VOL.1

REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

DATE: 19th September, 2017

Godwin Kinamasya Mbevi
University of Nairobi
P O Box 30197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "**The influence of organization factors in the implementation of lean six sigma in Kenya's Service Sector Projects: Case Stanbic Bank Kenya's Operations Department,"**

This office has no objection and authority is hereby granted for a period ending 18th September, 2018 as indicated in the request letter.

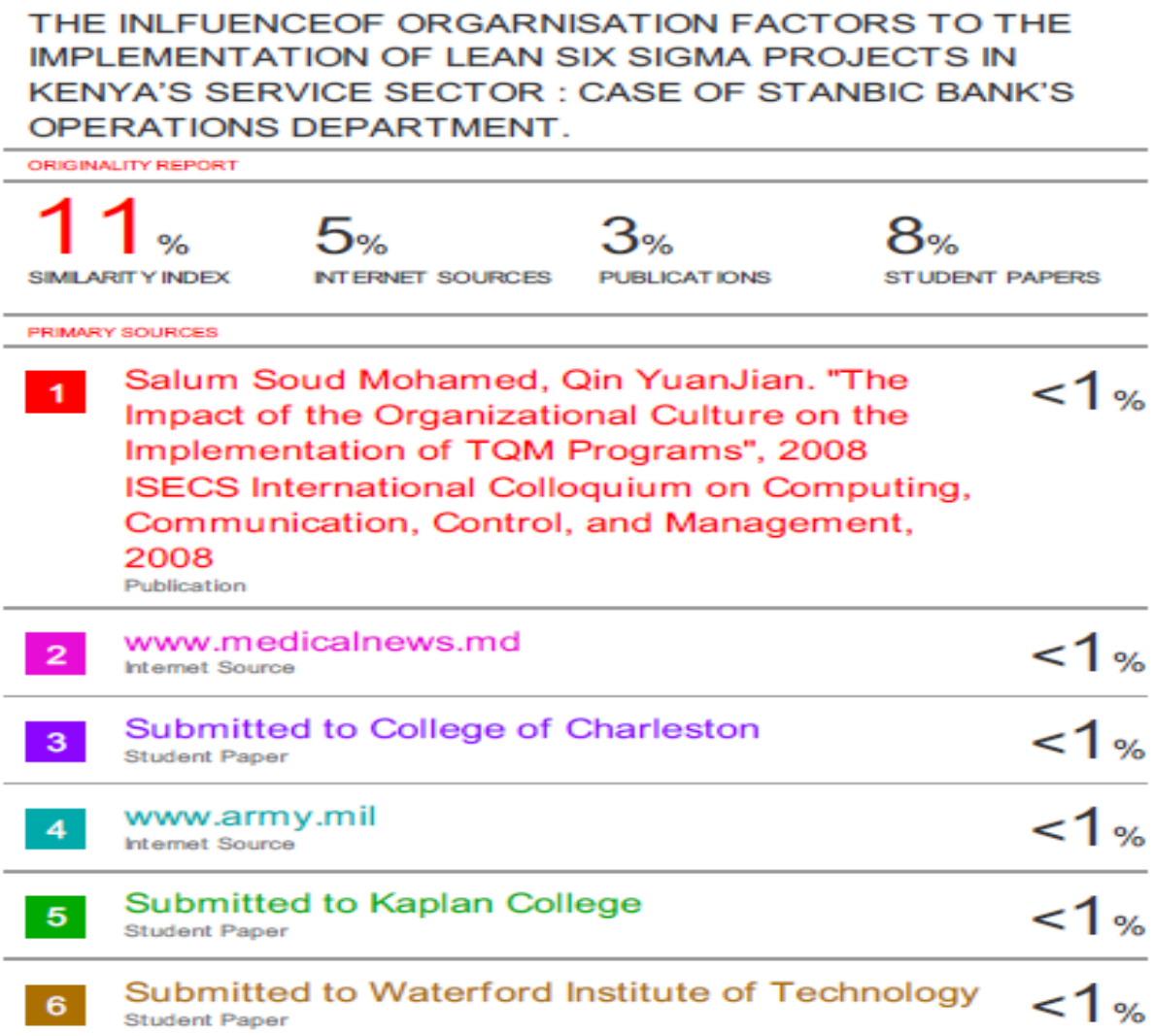
Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

COUNTY DIRECTOR OF EDUCATION
19 SEP 2017
MINISTRY OF EDUCATION
P. O. Box 74629, NAIROBI

JAMES KIMOTHO
FOR: REGIONAL COORDINATOR OF EDUCATION
NAIROBI

c.c.
Director General/CEO
Nation Commission for Science, Technology and Innovation
NAIROBI

APPENDIX IV: ORIGINALITY REPORT



THE INLFUENCEOF ORGARNISATION FACTORS TO THE IMPLEMENTATION OF LEAN SIX SIGMA PROJECTS IN KENYA'S SERVICE SECTOR : CASE OF STANBIC BANK'S OPERATIONS DEPARTMENT.

ORIGINALITY REPORT

11%	5%	3%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Salum Soud Mohamed, Qin YuanJian. "The Impact of the Organizational Culture on the Implementation of TQM Programs", 2008 ISECS International Colloquium on Computing, Communication, Control, and Management, 2008 Publication	<1%
2	www.medicalnews.md Internet Source	<1%
3	Submitted to College of Charleston Student Paper	<1%
4	www.army.mil Internet Source	<1%
5	Submitted to Kaplan College Student Paper	<1%
6	Submitted to Waterford Institute of Technology Student Paper	<1%

APPENDIX V: QUESTIONNAIRE

HEAD OF UNITS QUESTIONNAIRE

This questionnaire intends to investigate the influence of organizational factors in the implementation of lean six sigma in Kenya's service sector: case of Stanbic Bank's operations department. Your sincere and valuable responses are highly appreciated and will be treated with utmost confidentiality. Please tick or comment appropriately and return your completed questionnaire to the interviewer in charge. The questionnaire has a Likert's scale rating as follows. (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree. **Note;** respondent must not be coerced or enticed to participate. **Thank you.**

Section A (Personal information)

1. What is your designated role within the organization?

_____

2. How long have you worked for Stanbic Bank?

Less than one year ☐

Between one and three years ☐

More than three years ☐

3. What is your highest level of education?

Primary	Secondary	Tertiary	university
☐	☐	☐	☐

Section B (Effective communication)

4. How would you describe the level of staff awareness of the lean six sigma initiative?

High ☐

Average ☐

Low ☐

5. How well would you way describe your grasp of the implementation of lean six sigma projects if the department

High ☐

Moderate ☐

Low ☐

6. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly

	Statement	**1**	**2**	**3**	**4**	**5**
1	Change in roles occasioned by the implementation of lean six sigma is embraced by all					
2	Lean six sigma workshops are sufficiently regular					
3	The significance of implementing lean six sigma projects is well understood by all staff in the department					
4	The outcomes of complete lean six sigma projects including failures, successes, obstacles, and challenges are clear to all relevant staff in the department.					
5	There is little or no resistance to the implementation of lean six sigma projects within the department					

Section C (organization culture)

7. How would you describe the attitude of your subordinates towards change?

_____

8. Would you describe Stanbic bank's cooperate culture as improvement oriented?

Yes ☐ Somewhat ☐ No ☐

9.Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	The pattern of Stanbic's values, believes and assumption are ones that embraces change					
2	Finding and sharing better and more efficient ways is accomplishing task is common and encouraged					
3	The attitude of staff in the department is favourable process improvements initiatives.					
4	The time it takes to accomplish various tasks in the department is established and deviations form this time is consistently tracked.					
5	Defective task performance by staff in the operations department often focuses attention to the processes rather than individuals					

Section D (Recognition and Rewards)

10. How would you describe the level of your subordinate's enthusiasm towards quality improvement initiatives by your department?

High ☐

Average ☐

Low ☐

11. To what degree would you say your subordinates are motivated by the reward and recognition extended to them

High ☐

Average ☐

Low ☐

13. Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	The department's reward and recognition criteria is linked to the Bank's overall growth strategy.					
2	Deviation from desired task performance specifications within your units has a correlation to the department's reward and recognition Criteria					
3	The department's reward and recognition strategy is well understood by all in the department					
4	The department's staff are sufficiently enthusiastic about process improvement projects					
5	quality, response time and cost are measures that are central to the department's reward and recognition system					

Section E (Top management commitment)

14. Is the Head of Operations sufficiently engaged in the implementation of lean six sigma? If yes How so?

_____

_____

15. Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	Management makes deliberate effort to steer lean six sigma projects					
2	Management schedules frequent site visits to make observations on the state of lean six sigma projects first-hand the degree to which lean Six Sigma is ingrained in the department's culture.					
3	Management spend adequate time in lean six sigma committees					
4	Process quality improvement is a frequent agenda in the department's Meetings.					
5	Adequate resources are allocated to lean six sigma projects.					

Section F (Implementation of Lean Six Sigma)

16. How would you describe the Return on Investment (ROI) of lean six sigma to Stanbic bank?

High ☐

Moderate ☐

Low ☐

17. Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	There has been a measurable decline in customer dissatisfaction since the inception of lean sigma in the operations department					
2	Employee productivity has improved since the inception of lean six sigma					
3	The services rendered by the operations department to Stanbic bank have significantly improved since the introduction of lean six sigma					
4	The implementation of lean six sigma in the operations department has a notable correlation to Stanbic bank's profitability					
5	The implementation of lean six sigma has facilitated innovation in the department					

UNIT MANAGERS QUESTIONNAIRE

This questionnaire intends to investigate the influence of organization factors in the implementation of lean six sigma in Kenya's service sector: case of Stanbic Bank's operations department **.** Your sincere and valuable responses are highly appreciated and will be treated with utmost confidentiality. Please tick or comment appropriately and return your completed questionnaire to the interviewer in charge. The questionnaire has a Likert's scale rating as follows. (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree.**Note;** respondent must not be coerced or enticed to participate. **Thank you.**

Section A (Personal information)

1. What is your designated role within the organization?

_____

2. How long have you worked for Stanbic Bank?

Less than one year ☐

Between one and three years ☐

More than three years ☐

3. What is your highest level of education?

Primary	Secondary	Tertiary	University
☐	☐	☐	☐

Section B (Effective communication)

4. Are you familiar with the term lean six sigma?

Yes ☐ Somewhat ☐ No ☐

5. Do you clearly understand the why and how of lean six sigma?

Yes ☐ Somewhat ☐ No ☐

7. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

	Statement	1	2	3	4	5
1	Fear of change and not measuring up to new standards that may be the product of lean six sigma projects is apparent among team leaders and processing staff					
2	Six sigma workshops are sufficiently frequent					
3	The importance of implementing lean six sigma projects is well understood by all in the department					
4	Views and feedback on lean six sigma implementation projects are proactively sought after					
5	Change in roles occasioned by the implementation of lean six sigma is embraces in the department					

Section C (Organization culture)

8. How would you describe the sufficiency of Stanbic bank's culture in facilitating change and process improvement?

Very sufficient ☐

Sufficient ☐

Insufficient ☐

9. Would you describe your organization's cooperate culture as proactively improvement oriented?

Yes ☐ Somewhat ☐ No ☐

10.Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	The pattern of the organization's values, believes and assumption are ones that embraces change					
2	Team leaders and processing staff take upon themselves shared responsibility for task accomplishment					
3	The values, believes and assumption of the bank reinforce the department's process improvements initiatives					
4	defective results prompts action on the process rather than individuals					
5	The time it takes to accomplish various tasks is established and deviations are consistently tracked					

Section D (Recognition and Rewards)

11.How would you describe the level of your subordinate's enthusiasm towards quality improvement initiatives by your department?

High ☐

Average ☐

Low ☐

12. What is your opinion of the criteria of reward and/or recognition extended to unit managers?

_____

13. Please tick as appropriate:(1)Strongly disagree (2) Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	The department's reward and recognition strategy is linked to the Organization's overall strategy.					
2	Deviation from desired task time, quality or cost within your unit has a general correlated to the department's reward and recognition criteria					
3	Quality, time and cost are central to the departments reward and recognition strategy					
4	Team leaders and processing staff are sufficiently enthusiastic about process improvement projects					
5	The Reward and recognition strategy is well understood by all tin the department					

Section E (Top management commitment)

14. In what ways is management involved in the implementation if lean six sigma projects?

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17. Please tick as appropriate:(1)Strongly disagree (2) Disagree(3)Neutral (4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	Top management spends sufficient time in lean six sigma					
2	Adequate resources are allocated to lean six sigma projects.					
3	Visits by top management to check up in process improvement initiatives are sufficiently regular					
4	Top management is adequately involved in reviewing lean six sigma projects, selection and closures.					
5	Process quality improvement is a frequent agenda in the department's meetings.					

Section F (Implementation of Lean Six Sigma)

18. How would you describe the return on investment (ROI) of lean six sigma to Stanbic bank?

High ☐

Moderate ☐

Low ☐

19. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

	Statement	1	2	3	4	5
1	There has been a measurable decline in customer dissatisfaction since the					
2	Employee productivity has improved since the inception of lean six					
3	The service rendered by the operations department to the bank has significantly improved since the introduction of lean six sigma					
4	The implementation of lean six sigma in the operations department has a correlation to the bank's profitability					
5	The implementation of lean six sigma has facilitated innovation in the department					

TEAM LEADERS AND PROCESSING STAFF QUESTIONNAIRE

This questionnaire intends to investigate the influence of organization factors in the implementation of lean six sigma in Kenya's service sector: case of Stanbic Bank's operations department. Your sincere and valuable responses are highly appreciated and will be treated with utmost confidentiality. Please tick or comment appropriately and return your completed questionnaire to the interviewer in charge. The questionnaire has a Likert's scale rating as follows. (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree. **Note;** respondent must not be coerced or enticed to participate. **Thank you.**

Section A (Personal information)

1. What is your designated role within the organization?

_____

2. How long have you worked for Stanbic Bank?

Less than one year ☐

Between one and three years ☐

More than three years ☐

3. What is your highest level of education?

Primary	Secondary	Tertiary	university
☐	☐	☐	☐

Section B (Effective communication)

4. How often have you heard of talk of lean six sigma in your department?

Very often ☐

Often ☐

Rarely ☐

5. How well do you understand the how and why of lean six sigma projects that are implemented in your department?

Very well ☐

Moderately ☐

Not at all ☐

6. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

Statement

		1	2	3	4	5
1	Often enough management organizes workshops on lean six sigma					
2	Staff that face inevitable changes in roles or duties due to the implementation of lean six sigma clearly understand the need for the change.					
3	Efficiencies gained in the department's processes through the implementation of lean six sigma are clear to all.					
4	Views and feedback from staff on the implementation of lean six sigma projects are proactively sought after by your seniors in the department					
5	Unit managers and head of units are responsive to challenges or fears arising from changes occasioned by the implementation of lean six sigma.					

Section C (Organization Culture)

7. What is your general feeling of the changes to the department's processes you have experienced since the department started implementing lean six sigma?

_____

_____

8. What is your attitude to the idea change is common, necessary and inevitable in the department.

Positive ☐

Indifferent ☐

Negative ☐

9. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

	Statement	1	2	3	4	5
1	The department's values, believes and assumptions positively influence the effectiveness of changes required for the success of lean Six Sigma implementation.					
2	The department's values, believes and assumptions reinforce team work among staff					
3	Finding and sharing better and more efficient ways of accomplishing task is common and encouraged					
4	The time it takes to accomplish various tasks in the department is established and deviations from this time are consistently tracked.					
5	Defective outputs from the department often prompts action on the process rather than individuals					

Section D (Reward and recognition)

10. What is your understanding of efficiency in the operations department process?

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11. What value do you place on the form/ quantity of reward/recognition extended to you following excellent performance?

High ☐

Moderate ☐

Low ☐

13. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

	Statement	1	2	3	4	5
1	The department's reward and recognition strategy has a general correlation to staff efficiency					
2	The department's reward and recognition strategy courses a desire among staff to eliminate defects and rework due to human error					
3	The department's reward and recognition strategy is linked to the banks overall strategy					
4	quality, response time and cost are central to the department's reward and recognition strategy					
5	The selection criteria of who is deserving of rewards/recognition is clearly understood and appreciated by all in the department.					

Section E (Top management commitment)

14. Is your Head of Unit sufficiently engaged in the implementation of lean six sigma? If yes, How so?

_____

_____

15.Please tick as appropriate:(1)Strongly disagree(2)Disagree(3)Neutral(4)Agree(5)Strongly agree

	Statement	1	2	3	4	5
1	Top management appear to lead from the front on the lean six sigma initiative.					
2	Top management make frequent site visits to observe first-hand the degree to which lean Six Sigma is ingrained in the department's culture.					
3	Heads of units spend adequate time in lean six sigma committees					
4	Process quality improvement is a frequent agenda in the organization meetings					
5	Adequate resources are allocated to lean six sigma projects.					

Section F (Implementation of Lean Six Sigma)

16. How would you describe the Return on Investment (ROI) of lean six sigma to Stanbic bank?

High ☐

Moderate ☐

Low ☐

17. Please tick as appropriate: (1) Strongly disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly agree

	Statement	1	2	3	4	5
1	There has been a measurable decline in customer dissatisfaction since the inception of lean sigma in the operations department					
2	Employee productivity has improved since the inception of lean six sigma					
3	The services rendered by the operations department to Stanbic bank have significantly improved since the introduction of lean six sigma by continually reducing defects in the department.					
4	The implementation of lean six sigma in the operations department has a Correlation to Stanbic bank's profitability.					
5	The implementation of lean six sigma has facilitated innovation in the department.					