# EFFECT OF LEAN PRACTICES ON OPERATIONAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN MOMBASA COUNTY

**BY**

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# DECLARATION

I declare that this research project is my original work and has never been submitted to any other University for assessment or award of a degree.

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D61/76494/2012

This project has been submitted for examination with my approval as the University Supervisor.

Signature ……. Date …….

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# DEDICATION

This work is dedicated to those who helped me carry out this research, to my family for their support and to the Almighty God for the wisdom and gift of life that has made me realize and see the conclusion of this research.

# ACKNOWLEDGEMENT

I am sincerely grateful to the Almighty for guiding me throughout my studies from the beginning of the course to its completion.

To my academic Supervisor, Kingsford Rucha for his great contribution and support offered that enabled this research project to take its present form, without his guidance and persistent help, this research would not have been successfully completed.

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Thank you to you all**.**

# ABSTRACT

Adopting lean practices for many organizations is to increase profit either directly by reducing costs or indirectly by improving productivity. However its effects on the operational performance isn't well established. In spite of the popularity of lean, some studies paint an ambiguous link on the positive effects of lean production on operational performance. The study aimed to establish the effect of lean practices on the operational performance of microfinance institutions in Mombasa. The focus was on the microfinance institutions in Mombasa County registered under the Central Bank of Kenya and Association of Microfinance Institutions. Census survey approach was used so as to cover all the 17 MFIs. The data was gathered exclusively from the questionnaire as the research instrument of which a response rate of 65% was obtained. Descriptive analysis, correlation and regression analysis was used to present the results in tables and figures. On the relationship that exists between lean practices and operational performance of MFIs in Mombasa County, the study concludes that a significant positive relationship exists. The study concludes that Just in Time, Total productive maintenance, Total quality management and Kaizen are some of the main practices used in enhancing the operations of the organizations. The study thus recommends that the implementation process of these strategies should be given top priority during formulation of organization policies.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF ABBREVIATION AND ACCRONYMS

**JIT**: Just-in-Time

**AMFIs:** Association of Microfinance Institutions Kenya

**TOC:** Theory of Constraints

**TPM:** Total Productive Maintenance

**TQM**: Total Quality Management

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Lean is a business concept that emphasizes on meeting customer expectations by delivering quality products at the least cost when required. The reverberating principle of lean is to reduce cost through continuous improvement (Womack, 1990). It is the methodical approach to improving and maintaining customer value by identifying and eliminating waste (of time, effort and materials) through continuous improvement by flowing the products at the pull of the customer in pursuit of perfection (Joosten, 2009). Womack (2002) explained that the concept and roots of lean are based on foundational ideas that date back to the production system known as Ford Production System in the Highland Park manufacturing plant, in 1913. Improvements in terms of reduced cycle and working times, improved quality as well as reduced costs and work in progress can be achieved (Leyer & Moormann, 2014).

In the first instance, a set of operations were established and utilised in a consistent manner. This led to more products being produced within very short flow times. Later on, the emphasis was directed towards product flow through the total process including right-sizing, sequencing operations and rapid changeover thus dimensioning the resources according to actual demand. Kilpatrick (2003) contends that organizations should embrace lean practices in order to reduce or eliminate wastes. They can be used interchangeably in the manufacturing organizations and equally to service industries.

This study is influenced by the theory of constraints which is a methodology for identifying the limiting factor which impedes achievement of a desired result and then improving the

constraint in a well ordered manner to the effect it ceases to be limiting. When applied in lean, it optimizes organization effectiveness by eliminating wastes from the part of the system that are the largest constraints on profitability (Goldratt, 1990). Queuing theory is applied in the management of queues and waiting lines (Singh, 2006). This has improved organization performance by improving speed of service delivery thus eliminating long lines. This has greatly improved customer satisfaction, employee morale and reduced operation cost. The other theory is knowledge based view which recognises that knowledge is the most important resource in an organization. Organizations can ensure the knowledge is leveraged and transferred within it thus ensuring continuity.

Microfinance institutions assist small enterprises and low income communities which have no opportunity to use the formal banking system in mobilizing savings and accessing financial services. Microfinance institutions have evolved as an approach to growing and expanding the economy in order to provide services to the entrepreneurial poor who do not have access to the traditional banking systems (Ledgerwood, 1999).

### 1.1.1 Lean Practices

Lean practices are defined processes that maximize customer value while minimizing waste (Endsley, Koning & Godfrey, 2006). Adopting lean quality practices is a strategic imperative for many organizations. Lean practices ultimate goal is to achieve organizational efficiency and greater productivity while providing services at lower costs. At the initial stage, lean was incorporated by an automotive manufacturer as a methodology to enhance its overall performance. It has evolved into an approach utilised by management to improve the overall performance of the organizations processes. Hwang and Hong (2014) argued that implementing lean practices is designed to improve the performance of the organisation.

In order to attain effective lean practices, it is important to address complex issues related to lean implementation including shared vision, fair implementation processes and outcomes (Joosten, 2009). In lean implementation, the core principles include specifying value as per the customers needs, recognizing the value stream, synchronizing the varied organization processes to ensure effortless production to meet customer demand and ensuring perfection through continuous improvement. The following practices are more process oriented therefore are able to be incorporated with the distinctive characteristics of services.

Just- in- time (JIT) is a practice set out to eliminate waste (Radziwill, 2013). JIT continuously seeks to make processes more efficient by emphasizing provision of quality services. Lean focuses on reducing waste through maximizing activities that add value to the customer (Ohno & Shingo, 1997). Total Quality Management underlines the need to efficiently utilise the organizations resources through improving the quality of goods and services (Collins, 1996). It encompasses customer focus, continuous improvement, employee training and involvement.

Kaizen refers to continuous improvement practices such as continued use of technology implementations e.g the enterprise resource planning makes access to information much faster and cheaper thus aiding in time management. Standardization of procedures enables work processes to improve thus laying the basis for continuous improvement. Kaizen seeks to attain increased quality and productivity as it helps to improve accountability and commitment from employees (Ramadani & Gerguri, 2011). Total Productive Maintenance is utilised by management to maintain and improve its resources. These include safety at the work place, ensuring equipment is running in an effective manner and productivity is maintained. Total cooperation from all employees is vital.

Lean practices in service industry can be understood to be well defined processes consisting of activities that generate value for customers and meet their expectations. There is need to involve the employees in the process leading to their empowerment. Organizations view lean as the best way to stimulate business performance in all aspects.

### 1.1.2 Operations Performance

This is the performance of an organization against prescribed standards such as compliance with regulation, waste reduction, and productivity. It is the firms' performance measured against standard or prescribed indicators of efficiency, effectiveness and regulatory compliance. It is understood to be a set of standards used to quantify both the efficiency and effectiveness of actions (Neely, 2005). Measurements of performance are efficiency, effectiveness, quality, timeliness, flexibility, cost and productivity. Birech (2011) outlines various performance measures within operations which are productivity measures, quality measures, inventory measures and cost of quality.

Lean can be understood from two levels of the organizational; the strategic and operational level (Hines, 2004). The strategic dimension puts emphasis on lean thinking in terms of the philosophical customer-centre perspective of lean. At the operational level there are the lean tools that enable the execution of the lean philosophy linked to the strategic level. These linked eventually impacts on the performance aspect of an organization.

There are studies that have identified a favourable relationship between implementing lean practices and performance improvements (Fullerton & Wempe, 2009). A survey done on US manufacturing firms (Schonberger, 1982; Fullerton, 2009), it was noted that firms implementing higher degree of lean practices including JIT manufacturing practices

outperform competitors who do not use such practices. In addition, studies done by Nakamura (1998) show that lean practices such as quality management and JIT have been found to improve quality aspects such as percentage of orders that pass final inspection without rework and downtime of machine due to failure during normal shifts. Hottenstein (1995) adds that employees' involvement and managers' commitment to JIT was also found to improve product quality and prevention of defects. Huson and Nanda (1995) argue that the real impact of JIT practice on profitability is mixed; cost per unit increases but earnings per share improves. Organizations that have implemented lean as a strategy have shown higher levels of quality and productivity and better customer responsiveness (Krafcik 1998; Nicholas 1998) thus improving the company's competitiveness.

In spite of the popularity of lean, some studies paint an ambiguous link on the positive effects of lean production on operational performance. Bhashin and Bucher (2006) state that although a lot of companies started implementing lean concepts, only 10% or less of the companies succeed in implementation. Ahmad et al (2003) and Balakrishnan et al (1996) argue that lean production does not contribute directly to business performance. In services organizations lean is used as a waste reduction in order to ensure the processes are efficient. This requires looking at the whole process from the customers' point of view.

### 1.1.3 Microfinance Institutions in Kenya

Microfinance emerged in the early 1700s from banking systems and later on expanding in the 1970s into the three forms of microfinance institutions known presently i.e. commercial, quasi commercial and non-profit microfinance institutions. Ledgerwood (1999) emphasized that microfinance has evolved as an economic development approach intended to benefit the low income communities in developing countries. It includes provision of financial services.

The Kenyan Microfinance industry is one of the oldest and most established in Africa (Mugwanga, 1999). It is a new source of financial services for loans, savings and insurance for many kenyans who are not in a position to access any type of financial services. The dominant MFIs in Kenya include Kenya Women Microfinance Bank, Faulu Kenya and Rafiki. As of today, many of them have converted into fully fledged microfinance banks. Central Bank of Kenya (CBK) has licensed 13 microfinance banks at present with 96 branches and 67 marketing offices across various regions in Kenya. The Association of Microfinance Institutions Kenya (AMFIs) has listed 9 microfinance banks (Deposit Taking Microfinance), 45 retail MFIs and 5 Wholesale MFIs (AMFI Annual Report, 2014).

### 1.2 Research Problem

Adopting lean practices for many organizations is to increase profit either directly by reducing costs or indirectly by improving productivity (McGrath, 2007). Various organizations across a broad spectrum of industries have successfully implemented lean and in turn reducing costs and improving quality. In McDonald's case, Levitt (1972) observed that methods used in mass production or assembly lines when applied to the service sector would ensure better efficiency in its operations, lower costs and satisfy clients in more specific ways. Piercy and Rich (2009) reported significant improvement in quality and costs through adoption and implementation of lean practices in services. The optimization of value adding activities is equally valid for service process improvement.

MFIs operational efficiency is the extent to which the donors and members needs are in conformity with its internal processes thus improving the lives of its members. Efficiency in operations management will enable MFIs to utilise the same amount of resources to broaden its member base thereby serving more people for a given. MFIs provide funding to social

enterprises and also help in uplifting the community. Ayayi and Sene (2010) found that sound management practices lead to improving operational efficiency and growth in customer base and lending.

Kamau (2014) indicates that Class 'A' road construction companies in Nairobi have successfully adopted various lean practices. These practices include: emphasizing on proper customer focus; developing avenues for waste reduction in their activities; practicing continuous improvement in their processes and adopting Just in Time technique of inventory management. Wafukho (2011) established that there was improved productivity and effectiveness in service delivery on implementing lean sigma strategy at GlaxoSmithKline. Ondiek and Kisombe (2012) noted when surveying the Kenyan sugar industry that implementation of lean practices is frequently associated with improvements in operational performance measures. Malonza (2014) while doing a case study of Mumias Sugar Company confirmed that lean manufacturing practices have a positive effect on operational performance. Lean practices used by service firms are very similar to those already adopted by manufacturing firms (Allway & Corbett, 2002). Bowen and Youngdal (1998) also argued for the applicability of lean practices in service industries.

The previous studies largely concentrated on manufacturing organizations and did not clearly outline how lean practices can be implemented in a service organization. Having understood the importance of efficient operations management in an organization, the question that arises is to what extent do lean practices impact on the operations of a service organization?

## 1.3 Research Objective

The research objective of this study provided a guideline as to how the research was carried out. The objective of this study was to determine the effect of lean practices on the Operational performance of Microfinance institutions in Kenya.

## 1.4 Value of the Study

The study undertaken sought to expound the concept of lean practices and their effect on performance aspects. This would help scholars to gain a deeper understanding of the various types of lean practices undertaken by service organizations with the aim of attaining competition. Students would through this study be assisted with information as they undertake research in various areas.

The policy makers would be able to comprehend what policies to put in place in order to improve organizations practices. Such policies when formulated would be able to be sensitive and aligned to the industry practices. This study would encourage the industry players to employ strategies that would not only improve their performance but also their management.

In the business environment, the study would help to establish the different lean practices that are undertaken by various organizations and in comparison, be able to establish the most effective form of lean practices based upon performance. Organizations in the service sector would be beneficiaries through the aspect of gaining better understanding of lean practices and being able to borrow the positive aspects that would enable them enhance growth and competitive advantage.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter focuses on the theories that inform this study. It gives an overview of literature on lean practices and how these practices affect operational performance. This chapter addressed the challenges faced in the service industry while implementing lean. An empirical review was undertaken underlying the need for this research.

## 2.2 Theoretical Review

The source of a firm's competitive advantage lies in how it is viewed from the outside as opposed to the observable strategic factors. Westbrook (1995) observed that operation management academics must embrace creative tension between theory and practice. Lean practices are components of lean systems with underlying theories that enable organizations to influence its activities. The theories to be discussed include queuing theory, theory of constraints and knowledge based view.

### 2.2.1 Queuing Theory

Queuing Theory is applied in the analysis of waiting lines or queues (Singh, 2006). This theory is utilised in business operations to determine the resources required to deliver a service. A replica of the queue is designed in order that the waiting time and length of the queues can be anticipated. This theory originated from models created to describe the Copenhagen telephone exchange (Haghighi & Mishev, 2008). This theory has been applied in different sectors such as hospitals, telecommunication and traffic departments.

Customer's arrivals vary from time to time. They sometimes arrive at almost the same time. Queues tend to form when the service is slow or when customers present themselves at the

service station at the same time. Queuing analysis provides valuable insight into a service system for congestion analysis and resource planning (Mital, 2010). The manner in which customers arrive and are selected for service will impact on the queue formation. This has enabled improvement in business performance by shortening the time spent on queues and shortening waiting lines (Pransanta, 2013). This is in line with the lean principle of eliminating waste.

### 2.2.2 Theory of Constraints (TOC)

The Theory of Constraints is an instinctive framework used in identifying the most important limiting factor that stands in the way of achieving a set objective and then systematically improving that constraint until it is no longer the limiting (Goldratt, 1990). Umble and Spoede (1991) argue that if any other factor other than the weakest link is strengthened, the strength of the whole chain is not increased. Improvements in the processes should focus on the weakest areas in the organization. The main constraints include the policies or the procedures put in place. Lack of clear goals to be followed often leads to conflicts among the different functions on the organization slowing improvement (Weston, Blackstone & Gardiner, 2007).

The TOC can be effective where a well laid out standardized process is established which can divulge and describe clearly problematic areas which are well known to members of the organization (Jaideep, 1996). Throughput, operating expense and inventory comprise the TOC set of measurements. This theory is based on the presumption that resources tend to be a limiting factor in many organizations thus should only be utilised towards well defined objectives. This will in turn enable the organization to improve its financial position and attract more customers (Weston, 1991). This in effect means that only the limiting factors

should be improved. TOC integrates the varied management processes as viewed in the whole organization context.

It highlights the different and interdependent nature of the processes of the organization as an interconnection of different departments, processes and functions where the materials are transformed into the final product. TOC enumerates the processes used in operations into a simple structure of throughput, inventory, and operating expenses (Fawcett & Pearson, 1991). TOC relates to lean thinking in that both emphasize on organizational performance with the aim of attaining high results and returns.

### 2.2.3 Knowledge Based View

This theory considers knowledge to be the most important resource of the organization (Thompson & Walsham, 2004). Firms apply knowledge for service delivery. This is entrenched in the organization through its policies, culture and employees. Knowledge is created and held by individuals, not organizations. Organizations thrive through sharing of knowledge with and among its employees (Kogut & Zander, 1996).

The knowledge is demonstrated in many forms and located on many levels in the organization. This can be leveraged and transferred to other members in the organisation thus ensuring continuity and continuous improvement. The organizations' customers focus affects selection and skill development of service employees which in turn facilitates sharing of knowledge across individuals to influence superior quality and efficiency (Jayanth & Xu, 2016).

## 2.3 Lean Best Practices

Lean practices have a more significant impact when implemented together as opposed to when implemented as standalone programs.

### 2.3.1 Just-In-Time (JIT)

The origin of JIT is universally linked to the Toyota Motor Company where it was identified as a technique for optimizing the processes and procedures by ensuring that only the products that are needed are produced. This eliminates work in progress and ensures that all wastes are reduced to a bare minimum. This concept epitomizes the need to develop products designed to the specification of the customers' needs and delivered at the opportune time thus ensuring no unnecessary waiting times or inventories (Svensson, 2001).

Service environments with high volumes, repetitive operations and with tangible products have benefitted more from application of JIT principles (Krajewski & Ritzman, 2005). Service delivery in a timely manner is often the cornerstone to achieving operational efficiency while utilising the bare minimum amount of resources. This in turn reduces inventory levels and improves quality (Lee, 1990; Schniederjans, 1993). Vonderembse & White (1991) observe that JIT approaches in the service sector can be implemented in terms of simplifying production processes, reducing inventories of supplies, and focusing on the quality of the service being provided.

Service companies must ensure clear cut communication is maintained with the customers. Proper design of organization work area encourages effective communication. Hewlett-Packard's direct marketing division's implementation of JIT resulted in reduction of overdue receivables and the lead time in its shipment operations (Lee, 1990). Organizations need to simplify their procedures in order that their customers and employees understand the requirements. The processing time for order is reduced. JIT has also been found to be so effective that it increases productivity, work performance, and product quality. Kanban as a JIT system can be effective in operations management by providing effective maintenance

programs, reducing lead time and minimizing employee turnover through consensus management.

### 2.3.2 Total Productive Maintenance (TPM)

TPM makes the most of enterprising and developing maintenance techniques with the support of the equipment operators, maintenance staff and personnel in order to increase and make the most of the performance of the machines. TPM initiatives help in streamlining the overall functions of the organization by ensuring equipment is operating at an optimal level leading to sustained profits (Ahuja & Khamba, 2007; Pramod, 2007).

TPM calls for the joint efforts of all the employees in ensuring collaboration between the maintenance and operations departments in order to minimise breakdowns and defects thus ensuring smooth workflow (Gulati, 2009). The subsequent results include improved product quality, increase equipment utilization, elimination of equipment breakdown, scaling down of scheduled and unscheduled equipment downtime. This leads to less costs incurred in operating and maintaining equipment. This also ensures equipment is utilised for a longer period.

### 2.3.3 Total Quality Management (TQM)

TQM is a structure of processes, policies and procedures used to enhance the operations of an organization. Organizations are thus able to maintain competitiveness by maintaining the quality of their products in order to maintain their clientele. (Chapman & Al-Khawaldeb, 2002). TQM is an approach used for continued refining and maintaining the quality of goods and services delivered by ensuring the employees are well trained. TQM is applicable to every operation in the company and recognizes the strength of

employee involvement (Mohanty, 1994). It includes a set of precepts, practices, methods, and techniques to improve quality and ensure customer satisfaction.

TQM's makes certain the quality meets the customers preferences in a manner that is affordable to the client. Adoption of TQM results in better quality of services, enhances the image of the company by treating a loyal customer base, reduces employee turnover and in turn leads to increased sales. Spechler and Rasmussen (1989) say that organisations need to make the transformations from the current practice of attempting to assure quality to actually measuring and improving the quality from both the internal provider perspective and external customer perspective. A, review of TQM has shown that organization culture influences its understanding which in turn affects its operationalization.

### 2.3.4 Kaizen

Kaizen is a Japanese word that means continuous improvement or the principles of continuous improvement. It is the process of measured and increased improvement while striving towards an exemplary business (Imai, 1997). Kaizen can be used to continuously search for waste and eliminate it thus achieving the main objective of lean thinking. The organization's objectives are aligned towards meeting customers' expectations. This ensures efficient and flexible compliance with the customer's requirements as to product or service specifications. Kaizen when implemented by organizations tend to show improvement in its processes and activities (Wilcox & Morton, 2006). Chan (2005) urged companies to adopt kaizen to improve competitiveness and deal with the increased competition in the market, thereby satisfying customers.

The Plan-Do–Check-Act cycle is a process oriented approach according to Imai (1997). Plan refers to setting a target for improvement, do is implementing the plan, check is the control

for effective performance of the plan, and act refers to standardizing the improved process and setting targets for a new improvement cycle. There must be an effort to minimize the working processes to improve service flows and response times. Kaizen when implemented in a continuous manner was likely to lead to greater improvements in an organization (Elliff, 2004).

### 2.4 Lean practices and Operational Performance

The lean notion has always been linked to operational performance (Shah & Ward, 2007). Operational performance has been commonly distinguished in terms of time, quality, cost and flexibility. While countless studies have been undertaken to display the impact of lean practices on operational performance (Huson & Nanda, 1995; Shah & Ward, 2007; Kannan & Tan, 2005), there exists observable evidence that indicates otherwise (Sakakibara, 1990; Callen, 2000). Sakakibara (1990) noted that there was no adequate corroboration to support a relationship of importance between lean practices and operational performance. Similarly, although some internal lean practices (e.g. set-up time reduction) had a positive effect on operational performance, it was found that not all lean dimensions appeared to be effective, and thus contradicting some of the earlier studies (Callen, 2000).

Fitzgerald (1991) examined performance measurement in service businesses. Montgomery (2010) suggests that a high degree of consideration is required to ensure that performance measures selected enable an organization to progress. The performance measurements include financial performance, competitive performance, quality of service, flexibility, resource utilization and innovation. The determinants include quality of service, flexibility, resource utilization and innovation. In order for an organization to monitor its progress performance measurement systems must be put in place. The system of measurement should

be able to notice any variations in performance and rectify it. Standardized performance measures can be used by almost any business and include balance scorecards, ISO standards and industry dashboards.

### 2.5 Empirical Review

Operations managers are not only concerned with customers but also the organizations that provide them with goods and services. Being aware of the resultant effect of implementing lean practices in an organization is vital to all those involved in the process. Literature analysed show that lean practices can effectively be implemented in organizations as a continuous process. Organizations that put in place efficient and effective communication systems enable its employees and its customers to easily adopt to change. Policies that constrain an organization thus making change adoption difficult should be improved in order to bring about progress. Kamau (2014) researched on lean supply chain practices on urban road construction. The study was able to reflect successful adoption of lean manufacturing practices in construction companies. While studying the sugar industry, Ondiek and Kisombe (2012) aimed to analyse the degree to which lean manufacturing tools and techniques are adopted by Kenyan sugar processing firms. The study concluded that there was lack of clear understanding of lean concept despite some lean manufacturing practices being implemented. The lean manufacturing practices were however not specific to the sugar industry and some practices were not included in the study. Malonza (2014) looked at how lean manufacturing influences operational performance at Mumias Sugar Company. He found that lean manufacturing practices have a positive effect on the operations of Mumias Sugar Company. The study also confirmed not much research work has been undertaken on lean practices in

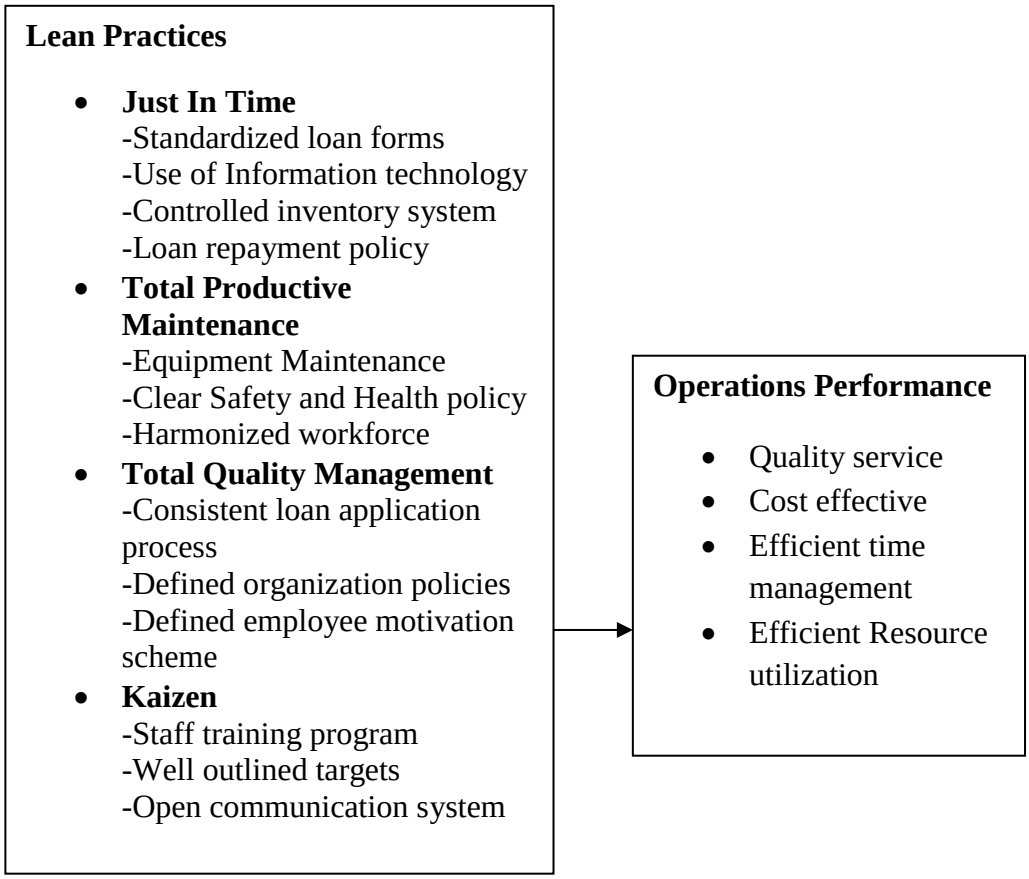
the sugar sector and advocated for further research to be undertaken on lean practices in services.

Allway and Corbett (2002) looked at shifting manufacturing practices to lean services. The study recommended applicability of lean practices in manufacturing and service firms. Ahlstrom (2004) looked at transferring lean production practices to services. The research indicated that the principles of lean practices can be incorporated in the service industry in order to improve its performance. However further studies were recommended to identify how the practices can be implemented. Cua et al (2001) looked at the relationship between just in time, total productive maintenance, total quality maintenance and manufacturing practices. The study evidenced that simultaneous implementation of these practices will result in higher performance as opposed to of implementation of each at a time. The above were mainly manufacturing organizations. Wafukho (2011) confirmed effective implementation of lean six sigma in service delivery at Glaxosmithkline. This was however a singular lean practice in a service organization. This literature review has shown that lean practices can be successfully implemented as a continuous process in service organisations, more so MFIs in Kenya. However, their effect on an organisations operation performance has not been clearly outlined. This study has expounded on this.

### 2.6 Conceptual Framework

This framework visualizes the present study. It enhances greater understanding of the effects of lean practices on the performance of organizations.

**Figure 2.1: Conceptual Framework**




Source: Research Data (2016)

## 2.7 Summary

As seen from the discussion above, lean seeks to eliminate waste through continuous improvement. This can only be attained through changing the organization culture by involving employee's right from its inception. Outlining clear policies and setting up structures that bring about change enables an organization to achieve its goals. This study has shown that operational performance of MFIs can be improved leading to sustainable operations. This results in more resources to offer assistance to borrowers and help in alleviating poverty.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

Research methodology is a way to solve the research problem in a consistent and efficient manner. This chapter outlines the methodology that was used to conduct the study. It covers the research design, population of the study, data collection and data analysis.

## 3.2 Research Design

The research design for this study was descriptive research design. Descriptive research design collects data from all participants in the population and seeks to provide a true measure of the population. This method provides more accurate and exact information as no unit is left out. The study utilized a census survey. Kothari (1990) argues that with a census survey all population elements are studied eliminating any element of chance and the highest accuracy is obtained. It also enables collection of large in-depth information from the population being studied. Cooper and Schindler (2003) state that census survey is more appropriate than sample survey when the population is small.

## 3.3 Population of the Study

The study focused on the microfinance institutions in Mombasa County registered under the Central Bank of Kenya and Association of Microfinance Institutions. Cooper and Schindler (2003) define a population element as the subject on which the measurement is being taken and is the unit of study. The population was in three categories; MFI banks, Wholesale MFIs and Retail MFIs.

## 3.4 Data Collection

This study employed primary data collection. The research instrument used was a self-administered questionnaire that comprised of both closed and open-ended questions where

the respondents were required to pick out a choice from a given selection or filled a response if none of the responses suited them. A questionnaire is a systematic compilation of questions that are submitted to a population from which information is desired (Baris, Davis & Johnson, 1989). It is vital in gathering information from widely scattered sources. The questionnaire assessed the microfinance organizations in terms of the described dimensions and targeted the general manager, operations manager and operations officer.

The instrument consisted of three parts; Part A dealing with information about each organization's profile, Part B captured the various types of lean practices being undertaken by the microfinance organizations, Part C captured effects of lean practices on performance of the organizations. The questionnaires were delivered both manually and electronically to picked from the organizations within two weeks. Interviews were administered in the event further clarification was needed for a particular section.

**3.5 Data Analysis**

In analyzing the effects of lean practices, this was guided by the objectives set out. The study utilized both descriptive analysis and regression. Regression analysis was used to determine the effect of the relationship between lean practices and operations management. The simple linear regression model was used to determine the nature of the relationship between lean practices and operations performance. Further analysis was conducted on the data where the coefficient of determination was calculated to check how well the equation fit the data used. The following regression equation is derived;

$$Y= \beta o + \beta_1 JT+\beta_2 TPM + \beta_3 TQM+ \beta_4 KZ+\sum_0$$

Where;

Y denotes the Operation performance of an organization

$\sum_0$ captures all the disturbances outside the model.

$\beta_0$ is the y intercept which demonstrates that an organisation that does not practise lean still has some level of performance.

$\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$ represents the extent to which the variables just in time, total productive maintenance, total quality maintenance and kaizen affect Y.

JT represents the mean of the Just in Time practices

TPM represents the mean of the Total Productive Maintenance practices

TQM represents the mean of the Total Quantitative Maintenance practices

KZ represents the mean of the Kaizen practice

# CHAPTER FOUR

# DATA ANALYSIS AND FINDINGS

## 4.1 Introduction

This chapter focuses on the data analysis, interpretation and presentation of the findings. The main purpose of the study was to examine the effect of lean practices on the operational performance of microfinance institutions in Mombasa. The researcher has made use of descriptive and correlation and regression analysis to present the result in tables and figures.

## 4.2 Response Rate

The study aimed at collecting primary data from the respondents. To achieve this, questionnaires were issued to 17 respondents who comprised of general manager, operations manager and operations officer. Out of which 11 questionnaires were completed and submitted back. This represents a response rate of 65%. The 6 who didn't respond, gave reasons as to having busy schedules. This implies that the response rate obtained was good and enabled generalization of the findings as it is in line with Mugenda and Mugenda (2008), who holds that a response rate of 65% is good.

## 4.3 Background Information

### 4.3.1 Educational Background

This section sought to determine the educational background of the respondents. The findings obtained as presented by Table 4.1, indicate that 82% had Bachelor degrees while 18% had Diploma's. This indicates that the respondents were qualified for their respective positions and thus gave valid and accurate information.

**Table 4. 1: Education Level**

| Education Level | Frequency | Percentage |
|---|---|---|
| Certificate | 0 | 0.00% |
| Diploma | 2 | 18.18% |
| Undergraduate | 9 | 81.82% |
| Post Graduate | 0 | 0.00% |
| **Total** | **11** | **100.00%** |

Source: Research Data (2016)

### 4.3.2 Position of the Respondents

This section sought to establish the position of the respondents in their respective organizations. The findings presented by Table 4.2, indicate that 62% were operation managers, while 18% each were general managers and operation officers. This shows that the respondents held managerial positions and were thus well conversant with the operations organizations.

**Table 4. 2 Position of the Respondents**

| Position | Frequency | Percentage |
|---|---|---|
| General Manager | 2 | 18% |
| Operations Manager | 7 | 64% |
| Operations Officer | 2 | 18% |
| **Total** | **11** | **100%** |

Source: Research Data (2016)

### 4.3.3 Number of Employees

This section sought to estabish the number of employees in the MFIs as a measure of their size. The findings are as shown by Table 4.3. As shown, 45% had over 350 employees, 27% had below 150 employees, 18% had 250-350 employees while 9% had 150-250 employees. This thus shows that the MFIs had large number of employees hence indicating their large size and capability to undertake most practices.

**Table 4. 3 Number of Employees**

| **Number of Employees** | **Frequency** | **Percentage** |
|---|---|---|
| Below 150 employees | 3 | **27.27%** |
| 150-250 employees | 1 | **9.09%** |
| 250-350 employees | 2 | **18.18%** |
| Above 350 employees | 5 | **45.45%** |
| **Total** | **11** | **100.00%** |

Source: Research Data (2016)

### 4.3.4 Age of the MFIs

This section sought to establish the year of inception of the MFIs as a measure of their age. The findings established is a shown by Table 4.4. As shown,55% had been operation for over 20 years, 27% a period of 15-20 years, 9% each a period of 5-10years and 10-15years respectively while none for a period less than 5 years. This thus implies that the MFIs had been operational for a considerable length of time and thus fully conversant of the current trends and practices.

**Table 4. 4 Age of the MFIs**

| Age | Frequency | Percentage |
|---|---|---|
| Below 5 years | 0 | 0.00% |
| 5-10 years | 1 | 9.09% |
| 10-15 years | 1 | 9.09% |
| 15-20 years | 3 | 27.27% |
| 20 years | 6 | 54.55% |
| **Total** | **11** | **100.00%** |

Source: Research Data (2016)

### 4.4 Lean Practices

This section sought to identify the type of lean practices that are undertaken within the organizations.

#### 4.4.1 Just in Time Practices

The study aimed at finding the extent which the Just in Time practices were adopted in the organizations. The findings obtained are as presented by Table 4.5

**Table 4. 5 Just in Time Practices**

| Just in Time Practices | N | Mean | Std Dev |
|---|---|---|---|
| Standardized set of loan application forms | 11 | 4.2 | 1.6535 |
| Effective use of information technology | 11 | 4 | 1.0653 |
| Controlled inventory management system | 11 | 4 | 1.0689 |
| Clear loan repayment policy | 11 | 4.181818 | 1.7554 |
| Customers participation in service delivery | 11 | 4.272727 | 1.5665 |

Source: Research Data (2016)

As presented, Standardized set of loan application form had a mean of 4.2, effective use of information technology had a mean of 4.0, controlled inventory management system had a mean of 4.0, clear loan repayment policy had a mean of 4.2 while customers participation in service delivery had a mean of 4.3. This shows that the most adopted just in time practice was increased customers participation in service delivery. However, all the Just in Time Practices were established to have very great extent of adoption (mean >4.0, std deviation >1.0). This findings concur with those of Koning et al (2006) who established the same in their study.

### 4.4.2 Total Productive Maintainance

The study aimed at finding the extent to which the total productive maintainance practices were adopted in the organizations. The findings obtained are as shown by Table 4.6:-

**Table 4. 6 Total Productive Maintainance Practices**

| Total Productive Maintenance | N | Mean | Std dev |
|---|---|---|---|
| Self-maintenance of office equipment | 11 | 4.1 | 1.1366 |
| Clearly laid out administrative functions | 11 | 4.3 | 0.9805 |
| Planned maintenance of equipment through engaging consultants | 11 | 3.8 | 0.4810 |
| Clearly outlined safety and health policy | 11 | 4.5 | 1.3886 |
| Harmonized and cooperative workforce | 11 | 5 | 2.8867 |

Source: Research Data (2016)

As presented, self maintenance of office equipment had a mean of 4.1, clearly laid out administrative functions had a mean of 4.4, planned maintenance of equipment engaging consultants had a mean of 3.8, clearly outlined safety and health policy had a mean of 4.5, harmonized and cooperative workforce had a mean of 5.0. This indicates that the most adopted total productive maintainance practice was harmonized and cooperative workforce. However all the practices except planned maintenance of equipment and engaging consultants had great extents of adoption (mean > 4.0, standard deviation > 0.5).

### 4.4.3 Total Quality Management

The study aimed at finding the extent to which the total quality management practices were adopted in the organizations. The findings obtained are as shown by Table 4.7:-

**Table 4. 7 Total Quality Management Practices**

| Total Quality Management | N | Mean | Std dev |
|---|---|---|---|
| Clearly defined organization policies | 11 | 4.8 | 2.1824 |
| Involvement of employees in process formulation | 11 | 4 | 0.5006 |
| Applying consistent procedures in loan applications | 11 | 4.8 | 2.1824 |
| Meeting applicants needs and expectations | 11 | 4.7 | 1.8660 |
| Provision of employee motivation scheme | 11 | 3.6 | 0.3784 |

Source: Research Data (2016)

As presented, clearly defined organization policies had a mean of 4.8, involvement of employees in process formulation had a mean of 4, applying consistent procedures in loan application had a mean of 4.8,meeting applicants needs and expectations had a mean of 4.7. Provision of employee motivation scheme had a mean of 3.6. This thus implies that the most adopted total management practice was applying consistent procedures in loan application while the least adopted was provision of employees motivation scheme. However all the other practices had large extents of adoption (Mean >4, Standard Deviation>0.5).

### 4.4.4 Kaizen

The study aimed at finding the extent to which the Kaizen practices were adopted by the MFIs. The findings obtained are as shown in Table 4.8:-

**Table 4. 8 Kaizen Practices**

| Kaizen | N | Mean | Std dev |
|---|---|---|---|
| Formation of cross functional teams in the workforce | 11 | 4.090909 | 0.8181818 |
| Continuous training of employees | 11 | 4.636364 | 1.592856 |
| Well defined employee targets | 11 | 4.272727 | 1.4554921 |
| Clearly set out loan issuance process | 11 | 4.272727 | 1.4554921 |
| Open communication within organization | 11 | 4.363636 | 1.3111096 |

Source: Research Data (2016)

As presented, formation of cross functional teams in the workforce had a mean of 4.1. Continuous training of employees had a mean of 4.6. Well defined employee targets had a mean of 4.3. Clearly set out loan issuance process had a mean of 4.3. Open communication within organization had a mean of 4.4. This thus shows that all the practices had large extents of adoption (Mean >4.0 and standard deviation >0.5) with the most Kaizen practice being on continous training of employees.

### 4.5 Effects of Lean Practices on Operations Management

This section sought to establish the effect lean practices have on operation management areas. The findings obtained are as illustrated by Table 4.9.

**Table 4. 9: Effects of Lean Practices on Operations Management**

| Effects on Operation Management Areas | N | Mean | Std dev |
|---|---|---|---|
| Organization strives to ensure service quality improvement | 11 | 4.9 | 2.5258 |
| Period of processing loan applications is reduced | 11 | 4.1 | 1.6893 |
| Organization inventory is manageable | 11 | 4.7 | 1.8660 |
| No. of loans increased | 11 | 4.8 | 2.1824 |
| Organization ensures processes and systems in place | 11 | 4.9 | 2.5258 |
| Open communication policy | 11 | 4.7 | 1.8660 |
| Structures put in place improved cost of doing business | 11 | 4.2 | 1.4554 |
| Organization formulates policies to reflect clients' needs | 11 | 4.8 | 2.1824 |

Source: Research Data (2016)

As shown, an organization striving to ensure service quality improvement had a mean of 4.9; period of processing loan applications is reduced had a mean of 4.2; Organization inventory is manageable had a mean of 4.7; Number of loans increased had a mean of 4.8; Organization ensures processes and systems in place had a mean of 4.9. Open communication policy had a mean of 4.7. Structures put in place improved cost of doing business had a mean of 4.3. Organization formulates policies to reflect clients needs had a mean of 4.8. This implies that the lean practices influences the operational performance to a very great extent (mean >4.0, standard deviation >1.0). This concurs with Kimani (2013) who conducted a study on Lean Supply Chain Management of Manufacturing firms in Kenya.

## 4.6 Test for the Model Assumptions

### 4.6.1 Test of Normality

From the nalysis done, Just in Time had a skweness of 0.768 and tolerance of 1.492. Total Productive Maintainance had a skweness of 0.035and tolerance of -0.884. Total Quality Management had a skweness of 0.7065 and tolerance of .-0.475. Kaizen had a skweness of 0.293 and tolerance of 2.341. Notably, for all the variables, skewness and kurtosis statistics were within +/-2 and hence the data was normality distributed. The normality assumption of linear regression analysis was in place.

**Table 4. 10: Test of Normality**

| **Lean Practice** | **Skewness** | **Kurtosis** |
|---|---|---|
| Just in Time | 0.768 | 1.492 |
| Total Productive Maintainance | 0.035 | -0.884 |
| Total Quality Management | 0.7065 | -0.475 |
| Kaizen | 0.293 | 2.341 |

Source: Research Data (2016)

### 4.6.2 Multicollinearity Analysis

From the analysis, Just in Time had a tolerance degree of 0.618 and VIF of 1.409. Total productive maintainance had a tolerance degree of 0.545 and VIF of 1.618. Total quality management had a tolerance degree of 0.506 and VIF of 1.834. Kaizen had a tolerance degree of 0.71 and VIF of 1.976. The findings are presented in Table 4.11. For all the variables, the degree of tolerance was greater than 0 and VIF less than 2. This meant that there was no multicollinearity in the study data and hence no adjustments were required.

**Table 4. 11: Multicollinearity Test**

| Variable | Tolerance | VIF |
|---|---|---|
| Just in Time | 0.618 | 1.409 |
| Total Productive Maintainance | 0.545 | 1.618 |
| Total Quality Management | 0.506 | 1.834 |
| Kaizen | 0.71 | 1.976 |

Source: Research Data (2016)

### 4.7 Autocorrelation test

Autocorrelation entails the correlation of a variable with itself or over consequent observations (Greene and Williams, 2012). In this study, the Durbin Watson Test was used to establish the autocorrelation of the study variables. This was used to check that the residuals of the models were not autocorrelated since one of the basic hypothesis is the independence of the residues. As such, when $p=0$ there is no serial correlation, $p>0$ positive correlation, $p<0$ negative correlation. The results obtained as presented show that Just in time has 1.7897, Total productive maintainance has 1.8203, Total quality management has 1.6056 and Kaizen has 1.9641. This thus implies that no Durbin Watson statistics was close to the prescribed 2.0 for residual independence, meaning that the data had no autocorrelation.

**TABLE 4. 12 DURBIN WATSON**

| Lean Practice | Durbin Watson |
|---|---|
| Just in Time | 1.7897 |
| Total Productive Maintainance | 1.8203 |
| Total Quality Management | 1.6056 |
| Kaizen | 1.9641 |

Source: Research Data (2016)

### 4.8 Regression Analysis

Multiple regression analysis was adopted in determination of the relationship that exists between lean practices and the operational performance of microfinance institutions in Kenya. The multiple linear regression model was employed as it enables investigation of the effect of two or more variables.

The following are the results of the fitted model.

**Table 4. 13 Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .932a | . 0.892 | 0.864 | 0.0004 |

Source: Researcher Data (2016)

This data provides an R value of 0.932 which represent the simple correlation. This indicates a high degree of correlation between the research variables. The R square value is 0.892 implying that about 89.2% of the variation seen in operational performance of MFIs is explained by the variables in the study mainly;Just in Time, Total productive maintainance, Total quality management and Kaizen. This further implies that only 11.8% of the variation seen in operation performance of MFIs is explained by other variables which are not in the model.

**Table 4. 14 Model Analysis of Variance**

| | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 5907.841 | 4 | 1476.96 | 7.725 | .0007a |
| Residual | 26539.07 | 31 | 856.099 | | |
| **Total** | **32446.91** | **35** | | | |

Source: Research Data (2016)

From Table 4.13, results indicate that overall, the model is highly significant. This is because the p-value obtained of 0.0007 is less than both 0.01 and 0.05. Thus implying that at 5% level of significance, at least one of the variables included in the model is useful in predicting the operational performance of the MFIs.

The model coefficients obtained by the study are shown in Table 4.14. As shown in the model, Just in Time had 0.0020, Total Productive Maintainance had 0.0130, Total Quality Management had 0.4320 and Kaizen had 0.9920. The positive coefficients obtained indicate that all the variables have a positive effect on the performance of the MFIs. These increased measures would result in improved financial performance of the MFIs. However, the only models that were established to be more significant were total productive maintainance and total quality management as their p-value were less than 0.05. The predictive model thus adopted by the study entailed;

Y= -0.5230 + 0.0020 JT+0.0130 TPM + 0.4320TQM+ 0.9920 KZ

Where; Y denotes the Operation performance of an organization , JT represents the mean of the Just in Time practices , TPM represents the mean of the Total Productive Maintenance

practices, TQM represents the mean of the Total Quantitative Maintenance practices and KZ represents the mean of the Kaizen practice.

**Table 4. 15 Model Coefficients**

| | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | -0.5230 | 0.2940 | | -1.7810 | 0.0830 |
| Just in Time | 0.0020 | 0.0020 | 0.0410 | 1.0080 | 0.3200 |
| Total Productive Maintainance | 0.0130 | 0.0060 | 0.1330 | 2.1666 | 0.0260 |
| Total Quality Management | 0.4320 | 0.2800 | 0.1210 | 1.5450 | 0.0012 |
| Kaizen | 0.9920 | 0.0890 | 1.0290 | 11.1210 | 0.4600 |

Source: Research Data (2016)

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter contains summary of the study, conclusion and recommendation for policy and areas for further research. Data analysis, summary and conclusions were made in line with the study objective which was to determine the effect of lean practices on the operational performance of Microfinance institutions in Mombasa County.

## 5.2 Summary of the Findings

The study sought to determine effect of lean practices on the operational performance of microfinance institutions in Mombasa. The focus was on the microfinance institutions in Mombasa County registered under the Central Bank of Kenya and Association of Microfinance institutions. Census survey approach was used so as to cover all the 17 MFIs. The data was gathered using the questionnaire as the research instrument of which a response rate of 65% was obtained. Descriptive and correlation and regression analysis was used present the result in tables and figures.

The study also aimed at establishing the various lean practices put in place by the MFIs. The findings obtained revealed that Just in Time, Total productive maintainance, Total quality management and Kaizen are the lean practices used in enhancing the operations of the organizations. Just in time practice particularly increased customers participation in service delivery. The most adopted total productive maintainance practice was harmonized and cooperative workforce while the most adopted total management practice was applying consistent procedures in loan application. The most adopted Kaizen practice being on

continous training of employees. The study further indicated that all the lean practices had above moderate extents of adoption with some even having very large extents of adoption. This is an implication of the acceptance and use of lean practices as one of the major strategies in ensuring maximal operational performance while reducing waste. This is supported by the findings which established the effect of lean practices on operational performance. The lean practices were established to influence the operational performance to a very great extent (mean >4.0, standard deviation >1.0). This shows that the lean practices influence how the operations of an organization are undertaken.

The regression analysis was further used to establish the direction of relationship that existed between the dependent and independent variables. The coefficient of determination value obtained was 0.892. This implies that about 89.2% of the variation seen in operational performance of MFIs is explained by the variables in the study mainly; Just in Time, Total productive maintainance, Total quality management and Kaizen. This also means that only 11.8% of the variation seen in operation performance of MFIs is explained by other variables which are not in the model. The relationship was significant as the p value obtained was less than 0.5. Additionally, the model coefficients obtained revealed that all the variables had significant positive relationship with operational performance. Just in Time had 0.0020, Total productive maintainance had 0.0130, Total quality management has 0.4320 and Kaizen has 0.9920. The predictive model thus adopted by the study; Y= -0.5230+0.0020JT+ 0.0130 TPM + 0.4320 TQM+ 0.9920 KZ Where Y denotes the Operation performance of an organization, JT represents the mean of the Just in Time practices, TPM represents the mean of the Total Productive Maintenance practices, TQM represents the mean of the Total Quantitative Management practices and KZ represents the mean of the Kaizen practices.

## 5.3 Conclusions

The study concludes that Just in Time, Total productive maintainance, Total quality management and Kaizen positively affect the operational performance of the MFIs. This is mainly because these practices have been shown to improve the quality of operations. As such the study concludes that all these practices have been adopted in the organizations to a great extent with none having low levels of adoption. On the relationship that exists between lean practices and operational performance of MFIs in Mombasa county, the study concludes that a significant positive relationship exists. This is because all the variables were established to have positive coefficients. Hence the lean practices ensure not only the effectiveness of the procedures but also the efficiency of operations.

## 5.4 Recommendations

From the findings, several recommendations are made. The study established that the operations of the MFIs can be determined greatly by the type of lean practices employed. The study thus recommends that the implementation process of these practices should be given top priority during the organization policy formulation. Adequate time and resources should be allocated in ensuring that the practices are implemented succefully. Additionally, the organizations should focus more on the practices that are likely to accrue more benefits. This will go a long way in not only boosting but also improving the organization performance at large.

## 5.4 Limitations to Study

The study was faced with various challenges. To begin with, the operation strategies of a particular MFI are very delicate, hence the respondents were reluctant in providing such information. However, the researcher informed them that all the collected data will be used for academic purposes. The study was also limited that it only focused in the MFIs only

located at Mombasa. This may not be an equal representation of MFIs in the country and also other organization in other sectors.

Also, this study centered on only particular variables of lean practices on operational performance. The study did not consider any other factors that inevitably affect the operational performance regardless of the lean practices put in place in the organizations such as the social-economic and technological factors. Similarly, there is the possibility of omission of other lean practices variables that may be relevant in the performance of an MFI. Despite of this, the information provided did provide a clear picture of the effects the lean practices have on the operational performance.

### 5.5 Suggestions for Further Research

Despite the research questions being well answered, several areas remain unclear and require further research. The study only focused the existing lean practice, without giving much consideration how they were implemented. The study thus suggests further research should be done on the implementation process of lean practices while also researching the various challenges that may occur. The study was only limited to MFIs in Mombasa County. So as to enable generalization of the findings, the study suggests that further study to be conducted on MFIs in other parts of the country. Additionally, a study could be conducted on other organizations other than the MFIs so as to establish whether the similar situation prevails in these organizations.

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# APPENDICIES

## APPENDIX I: QUESTIONNAIRE

### SECTION A: GENERAL INFORMATION

1) Name of the organization……

2) Current number of employees

☐ 10-20

☐ 20-50

☐ 50-100

☐ Above 100

3) How long has the organization been in operation? .....

4) Position of the respondent within the organization

☐ General Manager

☐ Operations Manager

☐ Operations Officer

5) Education level of respondent in (Q4) above.

☐ Certificate ☐ Diploma

☐ Undergraduate ☐ Post Graduate

### SECTION B: LEAN PRACTICES

6) Identify and tick the type of lean practices that you consider are undertaken within your organization. Tick appropriately the level to which you agree using the following scale **1=Very low, 2=Low, 3=Moderate, 4=High, 5=Very high**

Levels of Application

| **Lean Practices** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **Just-In-Time (JIT)** | | | | | |
| 1. Standardized set of loan application forms | | | | | |
| 2. Effective use of information technology | | | | | |
| 3. Controlled inventory management system | | | | | |
| 4. Clear loan repayment policy | | | | | |
| 5. Customers participation in service delivery process | | | | | |
| **Total Productive Maintenance (TPM)** | | | | | |
| 6. Self-maintenance of office equipment | | | | | |
| 7. Clearly laid out administrative functions | | | | | |
| 8. Planned maintenance of equipment engaging consultants | | | | | |
| 9. Clearly outlined Safety and Health Policy | | | | | |
| 10. Harmonized and co-operative workforce | | | | | |
| **Total Quality Management (TQM)** | | | | | |
| 11. Clearly defined organization policies | | | | | |
| 12. Involvement of employees in process formulation | | | | | |
| 13. Applying consistent procedures in loan applications | | | | | |
| 14. Meeting applicants needs and expectations | | | | | |
| 15. Provision of employee motivation scheme | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Kaizen** | | | | | |
| 16. Formation of cross functional teams in the workforce | | | | | |
| 17. Continuous training of employees | | | | | |
| 18. Well defined employee targets | | | | | |
| 19. Clearly set out loan issuance process | | | | | |
| 20. Open communication within the organization | | | | | |

**SECTION C: OPERATIONAL PERFORMANCE OF MFIS**

7) Below are statements on lean practices by microfinance institutions in Kenya. Please rate these statements by ticking to indicate your level of agreement where:- **1=Very low, 2=Low, 3=Moderate, 4=High, 5=Very high**

**Levels of effect**

| **Operation Management Areas** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| The organisation is always striving to ensure service quality improvement | | | | | |
| The period for processing of loan applications is reduced | | | | | |
| The organisation's inventory is manageable | | | | | |
| The number of loans issued by the organisation have been on the increase | | | | | |
| The organisation ensures processes and systems are in place for efficient work performance | | | | | |
| The organisation maintains an open communication policy with its staff and clients | | | | | |
| The structures put in place have greatly improved the cost of doing business | | | | | |
| The organization continuously formulates its policies to reflect its clients needs | | | | | |
| Any other (Please indicate) | | | | | |

# APPENDIX II: TIMELINE

| ACTIVITY | 1st - 29th JUNE 2016 | 1st – 30th july 2016 | SEPT. 7TH - OCT 7TH 2016 | OCT 8TH - 14th OCT 2016 | 1ST – 11th NOVEMBER 2016 |
|---|---|---|---|---|---|
| Proposal writing | | | | | |
| Questionnaire structuring , approval and presentation | | | | | |
| Collection of data | | | | | |
| Analysis of variables | | | | | |
| Report presentation | | | | | |

# APPENDIX III: BUDGET

| ITEM | COST (Ksh.) |
|---|---|
| Transport | 5000 |
| Stationary | 10000 |
| Secretarial work | 4000 |
| Air time | 5000 |
| Contingency | 5000 |
| Printing and binding | 6000 |
| **TOTAL** | **35,000** |

## APPENDIX IV: LETTER OF DATA COLLECTION

Dear Sir/ Madam,

**RE: MBA RESEARCH**

I am a student at The University of Nairobi (UON), pursuing a Master of Business and Administration (MBA). I am undertaking a research project in partial fulfillment of the academic requirements. My study is on ―*EFFECTS OF LEANPRACTICES ON OPERATIONS MANAGEMENT OF MICROFINANCE INSTITUTIONS IN MOMBASA COUNTY.*

Your organization has been selected to form part of the study. I will be very grateful if you would spare sometime from your busy schedule, to respond to the questions listed on the attached questionnaire.

Your response will be treated with uttermost confidentiality. The findings of this research may be availed to you upon completion of the research if you so request.
Your assistance and co-operation will be highly appreciated.

Yours faithfully,

Elain M. Madiavale
University of Nairobi
Master of Business Administration student

# APPENDIX V: LIST OF MICROFINANCE INSTITUTIONS

**Banks**

1. Century Microfinance Bank
2. Kenya Women Microfinance Bank (KWFT)
3. Rafiki Microfinance Bank
4. Faulu Kenya
5. Remu Microfinance Bank
6. Sumac Microfinance Bank
7. SMEP Microfinance Bank
8. U&I Microfinance Bank
9. Uwezo Microfinance Bank
10. Choice Microfinance Bank
11. Daraja Microfinance Bank
12. Caritas Microfinance Bank
13. Maisha Microfinance Bank

**Wholesale MFIs**

1. Jitegemee Trust
2. Oikocredit
3. Mespt
4. Women Enterprise Fund
5. Stromme Microfinance East Africa Ltd

**Retail MFIs**

1. Blue Limited

2. K-rep Development Agency
3. Eclof Kenya
4. Kadet
5. BIMAS
6. SISDO
7. Micro Africa Ltd (Leshego)
8. Opportunity Kenya
9. Yehu Microfinance Trust
10. Fusion Capital Ltd
11. Canyon Rural Credit Ltd
12. One Africa Capital Ltd
13. Jitegemee Credit Scheme
14. AAR Credit Services
15. ADOK TIMO
16. Pamoja Women Development Programme
17. Juhudi Kilimo Co. Ltd
18. Musoni Kenya Ltd
19. Molyn Credit Ltd
20. Renewable Energy Technology Assistance Programme (RETAP)
21. Rupia Ltd
22. Taifa Options Microfinance
23. Select Management Services Ltd
24. Greenland Fedha Ltd

25. Youth Initiatives Kenya (YIKE)
26. Platinum Credit Limited
27. Ngao Credit Limited
28. Indo Africa Finance
29. Springboard Capital
30. Mimi Savings and Loans Limited
31. Kenya Entrepreneurship Empowerment Foundation (KEEF)
32. Women Enterprise Solutions
33. Focus Capital Limited
34. Samchi Credit Limited
35. Foundation Credit Services Limited
36. Milango Financial Services
37. Nationwide Credit Kenya Ltd
38. Fort Credit Limited
39. Jubilant Kenya Ltd
40. Opportunity Kenya
41. Rupia
42. YEHU
43. Vision Fund Kenya Limited
44. Habitat for Humanity Kenya
45. Real People

**Sacco's**

1. Unaitas Sacco Society

2. CIC Insurance
3. AIG Kenya Insurance Co. ltd
4. Microensure Advisory Services
5. Swiss contact