

**PERCEIVED INFORMATION TECHNOLOGY INTEGRATION AND
PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULLFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF MASTER OF BUSINESS
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DECLARATION

I declare that the research project is my original work and has not been submitted for examination for a degree in any other university

Sign..... Date.....

Ayaa Maina Jemimah

D61/85642/2016

This research project has been submitted for examination with my approval as the university supervisor.

Sign..... Date.....

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DEDICATION

I dedicate this study to my loving parents. My late dad, Gilbert Maina, I know you are proud of me. My mother, Esther Maina, your love and support is immeasurable.

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LIST OF ABBREVIATIONS

AMFI	: Association of Microfinance Institutions
CBK	: Central Bank of Kenya
IT	: Information technology
ICT	: Information, Communication and Technology
MFIs	: Microfinance Institutions
RBV	: Resource based View
TAM	: Technological Acceptance Model
RTGS	: Real Time Gross Settlement
ROI	: Return on Investment

ABSTRACT

The study examined perceived information technology integration and performance of microfinance institutions in Kenya. Particularly the study sought to provide answers to the question: What is the level of IT integration of information technology into business functions of microfinance institutions in Kenya? What is the relationship between IT integration and performance of microfinance institutions in Kenya? The study utilized resource based theory, technological acceptance model (TAM) and strategic alignment theory in how IT integration influences performance of microfinance institutions. A descriptive research design was used with a population of the study being the managers of microfinance institutions in Kenya. According to Central Bank of Kenya (2018), there are 13 Microfinance institutions operating in Kenya and all of them participated hence the study was a census. The study used primary data which was collected using questionnaires. Data were analyzed using frequencies, percentages, mean, standard deviation and regression analysis. The study achieved a response rate of 92.3% making the data adequate for analysis. The findings showed that IT integration enhances performance of microfinance institutions. Specifically, microfinance institutions have mostly integrated IT in Finance management, marketing management and human resource departments. Further findings showed that there is adequate skill in the microfinance institutions to effectively use IT resources and adequate technical skills to formulate effective IT solutions in the institution. The study also revealed IT integration has contributed to increased profits, increased operational efficiency and increased market share in the microfinance institutions. The study recommends the MFIs to increase the level of IT integration in all departments to improve customer, supplier and internal processes needs therefor enhancing the overall performance of the institutions.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

While studies of information technology and organization performance in many nations around the world are rich in ideas, empirical studies discover that the strong dynamic forces on how IT integration affect company performance are few (Soto-Acosta, Popa, & Palacios-Marques, 2016; Byrd, Pitts, Adrian, & Davidson, 2008). It is evident that a clear understanding of the internal dynamics of firms is required so as to explain the inconsistency in productivity associated with IT integration and how financial firms can navigate the dynamism and environmental turbulence that characterize their industry.

The capacity of information technology to integrate operations and offers across various channels provides a promising chance for most companies to improve their customer relationship and firm performance. As such, customer value the flexibility to know about the product availability, complete their orders and receive customer service across various channels in a convenient and integrated way. While information technology literature is varied on direct benefits of IT Integration on performance, the effects of such technology integration on performance largely remains as unexplored research area. Soto-Acosta, Popa and Palacios-Marqués (2016) hypothesized that although there lacks evidence on direct benefit of integration of technology on performance of microfinance, these technologies could support customer integration, consequently impacting operating performance. A review of available studies show that research undertaken to study the relationship between IT integration and organization performance vary in how fundamental constructs and interrelationships are conceptualized

Information Technology is moving more and more from back office function to being the main tool to increase bank's value over time. Therefore, IT brings out the most of banks in pro-active measures such as such as making their infrastructure more robust in terms of security, inter-branch communication move to Real Time gross settlement (RTGS) environment, real time databases, using Magnetic Ink Character Recognition and cheque clearing imaging among others. Woherem (2000) argue that only banks overhaul their entire payment and distribution channels and applying ICT to their day to day activities are likely to survive and thrive in the current generation. He suggests banks to evaluate their service and distribution systems to ensure they are correctly positioned within the dynamics office. In the meantime Kenya's microfinance sector has experienced tremendous changes related with IT innovations over the years, and it has become essential to conduct a study in Kenya in this context.

Strategic alignment theory will be used as the basic theory complemented by resource based theory and technology acceptance model.

1.1.1 Information Technology Integration

Information technology integration involves IT advancement and use of IT tools to support business systems (Kim, Shin, Kim and Lee, 2011). Kim et al. (2011) recognized IT administration abilities, IT work force skill and IT Infrastructure adaptabilities as the essential measurements of IT Integration, in parallel with the scientific classifications of physical, human, organizational perspectives.

In the IT sector, integration has been looked at from different viewpoints in information systems. The first viewpoint is a technical point of view which proposes that integration is a technique for identifying the interconnectivity of IT within an enterprise and the degree to

which common abstract representation of information elements is exchanged. This means integration is defined as the degree to which the various organizational structures are interconnected and able to communicate with each other.

Second viewpoint, integration is the degree to which two or more separate units have integrated business processes and are strongly linked across software and telecommunications technologies. (Chiang, Lim and Storey, 2000)

1.1.2 Organizational Performance

Organization performance is a measure of organizations' final achievement which includes targets, a period of time to achieve these targets and realization of efficiency and effectiveness. (Gibson, Ivanchevich and Donnelly, 2010).

Different organizational performance measurement methods have been employed to evaluate the effectiveness and efficiency of financial sector performance worldwide. The traditional approach includes measuring the organization major financial metrics over time (Rahut, Castallanos & Sahoo, 2010). These financial indicators include operational efficiency, profitability, liquidity and capital adequacy.

A performance measurement system makes it possible to make informed decisions and take action since it quantifies the efficiency and effectiveness of previous actions by acquiring, collecting, sorting, analyzing, explaining and distributing of appropriate information (Kanyurhi, & Bugandwa Mungu Akonkwa, 2016). Organizations evaluate their performance to establish their position (as a means in comparing positions, bench marking, and monitoring progress), communicating their position (as a means of communicating with the regulator internally on performance), confirming priorities (as a means of managing performance, cost and control,

focusing investments and actions) and compelling progress (as a means of managing performance, cost and control).

1.1.3 Microfinance Institutions in Kenya

A microfinance institution is a company licensed to carry out microfinance bank business in Kenya, it provides transactional, savings, loans and deposits services to low income earners and their business (CBK, 2018). The MFI Act enacted in December 2006 regulates MFSs in Kenya. The Microfinance Act adopted legislation on the institutions, accrediting and regulation of major microfinance institutions under the supervision of the Kenya Central Bank. However, MFI legislation came into force on 2008 to provide a platform for the broadening and deepening of access to financial services throughout Kenya, mainly the low income group and Small and Medium Enterprises (SMEs) in both urban and rural areas (CBK, 2018).

MFIs offer financial services through methodologies specifically designed to provide lenders with sustainability and lead to an improvement in consumer standard of living. According to recent report by Association of Microfinance Institutions (AMFI) (2018), as at 30th June 2017 there are 13 Microfinance banks in Kenya.

Microfinance plays a major component in the lives of low income earners in Kenya. It does this by offering solutions to their needs which is mainly providing easy access to financial services.

1.2 Problem Statement

Over the years, technology in business has continued to experience rapid change with an extremely competitive and innovative global environment. IT integration is essential to all organizations that intend to survive in this competitive environment. Despite the rapid growth

in IT integration, there is little evidence to prove that there is a link between information technology integration and organizational performance.

Several studies have been undertaken internationally on information technology integration and performance. This studies include Binuyo and Aregbeshola (2014) while examining the impact of information technology on commercial banks performance in South Africa as well as cost efficiency and IT investment. Richard, Devinney, Yip (2011) conducted a study on the relationship between IT integration, organization performance, innovation and organization growth among Iran's biggest manufacturers which showed that IT impact on organization performance is through innovation. Saloner and Shepard (2012) in another study the relationship between IT integration on banks' performance in the United States of America was investigated. The study discovered that IT reduces the banks operating expenses (the cost benefit).

In Kenya, MFIs have experienced tremendous growth over the years and a close scrutiny of the larger MFIs have revealed that a key ingredient in their good performance can be linked to IT integration (Njeri, Mugambi & Mutua, 2013). Kariuki (2017) investigated influence of information technology on financial performance in the banking sector and he reported that IT enhanced efficiency in banking and service delivery. Onchwari (2012) researched on information technology and the competitiveness of Commercial banks in Kenya and found out that commercial bank's overall performance was influenced by information technology adoption in various departments

The Kenyan microfinance banking industry has witnessed considerable changes. Not only has the number of licensed microfinance banks increased, but their operating environment and business models have also changed drastically in terms of service delivery owing to the changes

in technology (Central Bank of Kenya, 2018). While IT is significant in the performance of MFI, the above studies show there is a gap due to lack of evidence that shows the link between information technology integration and performance of microfinance institutions in Kenya. This therefore leads to research questions: What is the level of integration of information technology into business functions of microfinance in Kenya? What is the relationship between IT integration and performance of microfinance in Kenya?

1.3 Research Objectives

The main objective was to examine the effects of information technology integration on performance of microfinance in Kenya. The specific research objectives are:

- i. To establish the level of IT integration in microfinance institutions in Kenya.
- ii. To establish influence of IT integration on performance of microfinance in Kenya.

1.4 Significance of the study

This study is intended to establish whether there exists evidence between effects of IT integration and performance of microfinance. The study will equip microfinance managers with better understanding of how to improve the performance of their firms, the challenges faced by the microfinance and possible interventions that can be used to overcome such challenges.

Stakeholders including government and policy makers could use the information to identify the limitations of the MFIs in Kenya and make required changes. The findings will help to formulate and enact financial regulations. The research will add to information already available in Kenya in the field of IT integration and MFI's performance thus stimulating further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Review

This study used three theories which are Resource based theory, technology acceptance model and strategic alignment theory.

2.1.1 Resource Based Theory

Resource based view theory (RBV) stems from the management ideology that competitive advantage of organizations lies in their internal resources as opposed to their place in the environment externally. The organizations resource based theory assumes that certain types of assets owned and controlled by the organization have the ability to offer competitive edge and consequently superior organization performance (Kozlenkova, Samaha, & Palmatier, 2014).

This study explored how this theory can be used to describe progress in the banking sector with the adoption and use of IT. A number of researchers have examined the applicability of the theory to the IT domain and generally conclude that the differentiating factor for long-run effective IT deployment lie within organization's inner framework oriented on the organization competences (Hitt, Xu, & Carnes, 2016; Wang, Chen, & Benitez-Amado, 2015). The IT infrastructure of an organization has been defined as a significant business resource and a crucial source long term competitive advantage attainment. Resource based theory was used in this study because of its ability to explain IT as an important resource which can enhance performance in the banking sector.

2.1.2 Technology Acceptance Model

This study used Technology Acceptance Model (TAM), which was introduced by Fred Davis in 1986 (Martínez-Torres, et al., 2015). The goal by Davis' (1989) TAM is to understand the common determining factors of acceptance of technology that explain the actions of several users across a wide range of computer technology. Many studies have showed the fundamental components of TAM, both perceived usefulness and perceived ease of use which directly impact the behaviour of users.

TAM model by Davis is commonly used method to predict adoption of information technology (Baptista & Oliveira, 2016; Lai & Zainal, 2015). This theory was selected for this study because it explains the level of microfinance institutions acceptance on IT integration and its use in enhancing performance in microfinance sector.

2.1.3 Strategic Alignment Theory

The Strategic Alignment Theory (SAT) is associated with Venkatraman and Henderson (1983) who studied business alignment and IT strategy. In order to discuss the theory of strategic realignment, this study describes strategic alignment as a mechanism that links an organizations' structure and resources with its strategy and business environment. According to Venkatraman and Henderson (1983) many firms face a challenge of realizing value from IT investment because of lacking alignment between the firm and its IT strategy. Also firms might not realize value of their investment on IT because of lacking administrative process which are dynamic that ensures continuous alignment between the firm business and IT domain. For other proponents of this model, the communication between IT and personnel, reporting structures

and also the actual IT architecture or governance, are some of the important factors of alignment within the firm (Chattaramann, Kwon, Gilbert & Li, 2014).

Venkatraman and Henderson identify four main perspectives of alignment which are Strategy execution Technology potentials, Competitive and Service level.

According to Bao, (2015), how to create and sustain a balance between expected external (environmental) requirement and expected internal (organizational) resources has been a classic strategic management issue. The theory was chosen for this study because it explains IT as a firm's strategic tool in enhancing performance and helps MFI understand how they can utilize IT integration to increase productivity and offer better services.

2.2 Levels of IT integration

MFIs need constant efforts to implement IT strategies and links to convey a broad variety of products and services that are value adding to their clients. The introduction of technologies such as mobile and electronic banking has made rendering services more efficient in banking. Information technology is vital in electronic banking system in the world economy and Kenya banking industry cannot ignore the crucial role it plays in the sector. The integration of IT principles, technologies, policies and implementation methods into banking services has become critical composite for MFIs local and global banking competitiveness (Kundukchyan, et al., 2014; Barrett, Davidson, Prabhu, & Vargo (2015)).

IT combines the use of technologies such as software, telecommunication, web, voice, images, motion pictures and information technology –related multimedia presentations and processes to improve client's interactions (Vogel 2005). Information tools aid MFIs to know the market

dynamics and understand through the established basics of the 4 Ps (such as products, price, place and promotion), and improve customer experience through lower costs (Chesher & Linton, 2003). Information technology integration is therefore crucial in reducing costs and while improving versatility.

As noted by Tidd, and Bessant (2018) the traditional MFIs areas have been computerized such as, consumer banking, corporate banking and treasury operations of investment. Decision support systems are commonly used in areas such as product account analysis, customer productivity evaluation and fund costs bond yield estimates. Additionally expert systems are gradually being adopted by MFIs. However proper plan for strategic utilization of IT is missing. Their study further show that IT infrastructure consist of shared IT services, physical IT assets and intellectual IT assets.

2.2.1 IT infrastructure adaptabilities

In today's organizations, information technology infrastructure uses more advanced hardware, software and applications to provide data and information through networks and organizational access (Saloner and Shepard, 2012).

IT use has strategic potentials. Rowley (2011) identified the strategic potential of IT resources as sharable and reusable possessions of a firm. For this to be maintained, IT resources need to be upgraded. As Allen and Berger (2011) noted, existing IT applications and platforms may not keep up with a rapidly changing environment, so upgrading the infrastructure may be the key to improving an organization's effectiveness.

Organizations are increasingly recognizing the importance of an effective IT infrastructure (Byrd and Turner, 2011). The effectiveness of infrastructure can be evaluated using criteria such as reliability, flexibility, and upgrade ability.

2.2.2 IT Workforce Skills

It is crucial that an organizations workforce possess multiple skills in IT such as knowledge of IT elements and technology management expertise in order to effectively handle the organizations IT resources.

IT workforce expertise becomes a key asset for businesses when the workforce understand how the business strategies of the organizations are combined with IT skills (Feeny and Willcocks, 2008).

Organizations with proficient IT workforce are more likely to meet the demands of changing environments by aligning IT strategies with business strategies, designing robust, cost-effective solutions and predicting business services IT needs better than their competitors (Bhatt and Grover, 2011).Bharadwaj (2010) noted technical and managerial skills are fundamentals of human IT resource for long-term competitive advantage in the planning and development of IT systems that are efficient and cot-effective.

2.2.3 IT administration abilities

McKinsey (2011) noted that business organizations can improve their performance by establishing good stakeholder relationships. He further points out the pressure to be innovative and improving customer service in the competitive environment of retail banking.

IT plays a major role in organizations by enabling partnerships and linkages between the business, vendors and customers which facilitates exchange of information, goods/ services and

payments. The importance of such integration has been emphasized by many writers especially in the banking sector (Duncan and Elliot, 2012)

2.3 IT integration and performance of microfinance

Choosing a specific information technology to implement an organizations business strategy may impact its performance. The selection of as specific technology to implement business strategy therefore has an important effect on performance of an organization. For example, the Internet is rapidly growing and changing the nature of modern commerce (Simons, 2013). With the wide usage of online banking and other services, most firms rely completely on IT to run business transactions with clients and vendors.

It is noted that a simple way of improving organization performance is by enhancing productivity. The main areas in which organization can generate extra resource are the maximization of staff potential and the use of technology (Ghasemi, Habibi, Ghasemlo & Karami, 2019). In order to improve performance by using technology better, business players need comprehensive understanding of their crucial processes. With a wide range of technological decisions it is essential for an organization to take a considered approach to using new technology with a particular focus of integrating the existing technology.

García and Navas (2017) analyzed the relationship between information technology integration and success of an organization. The study showed overall impact of technological capabilities on organization's success. In a study by Alwan and Al-Zubi (2016) IT has been portrayed to provide companies with cheaper techniques (both tools and operations) to access opinions and positions of clients. Those advantages spread through various industries –for example, IT

integration to improve knowledge enabled the manufacturing sector in Tunisia to attract customer (Mouelhi, 2009).

Some studies in this area use proof that IT has elevated financial services, which depend on enhanced communication between systems and individual customers, since MFIs have a central decision making system to support all business that is provided to customers by IT (Shin, 2004).

In addition, IT integration enables banking sector to achieve major IT investments and derive benefit from it such as reducing costs through improved service with a fixed strategy for customers.

2.4 Summary of Literature Review

This chapter has looked at previous studies related to IT integration especially in the MFI industry. Indeed, microfinance institutions are considered as one of the development interventions, which have been recognized as powerful instrument to changing lives of low income households. Microfinance supports the low income households who are not banked to access financial services, get more income, and decrease their susceptibility. However, out of a very large number of MFIs operating in Kenya, there are still very few financially sustainable MFIs using IT integration.

2.5 Conceptual framework

Figure 2.1 shows the proposed conceptual framework which depicts the relationship between the dependent and independent variable in this study. The independent variables are IT administration abilities, IT workforce skills and IT infrastructure adaptabilities while the dependent variable is performance of microfinance institutions

Independent variable

Dependent variable

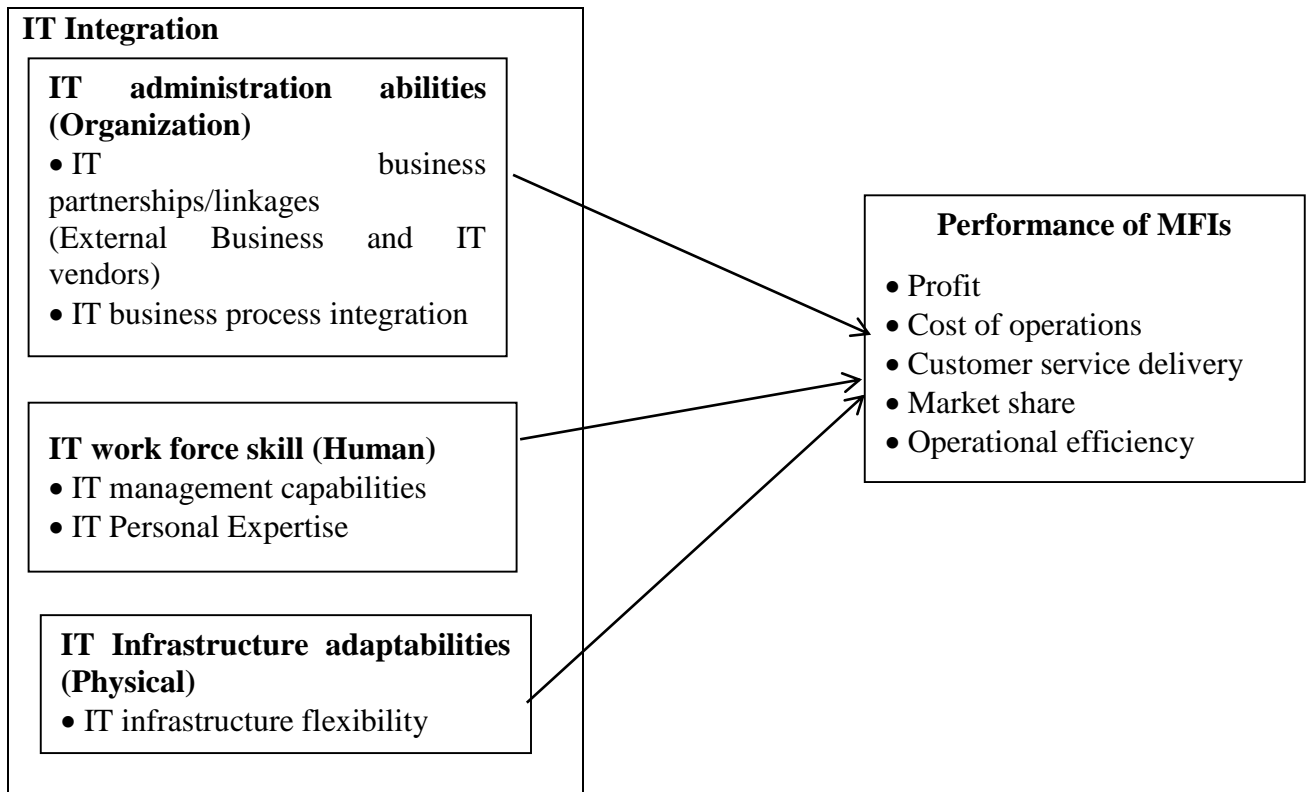


Figure 2.1: Conceptual model

Source: Researchers own conceptualization

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section addresses the steps to be taken in this analysis in the research methodology.

3.2 Research Design

The study used descriptive research design to collect information. According to Orodho (2003), descriptive design is a technique used to collect information from a sample of respondents through use of interviews or questionnaires.

3.3 Population

The population for this study was managers of microfinance institutions in Kenya. According to the report by Association of Microfinance Institutions (AMFI), there are 13 Microfinance institutions. Since population used in the study was small, census was used. In census, all elements in a group are listed and the study tends to measure one or more characteristics of those elements (Lavkaras, 2008).

3.4 Data Collection

Primary data was used for data collection. The data collection tool that was used is structured questionnaire. Questionnaire was used due to the following reasons: It provides a sense of confidentiality to the respondent, it reaches out to a wide range of respondents in a short time and gives respondents enough time and space to answer the questions. The questionnaire was administered to 4 respondents in each microfinance institution namely IT manager, Credit

manager, Finance manager and Operations manager since they are expected to provide required information on IT integration and performance of Microfinance Institutions.

3.5 Data Analysis

Both qualitative and quantitative data was analyzed by the study. This was done by use of statistical tools.

Objective	Data Analysis Technique
1	Descriptive Analysis
2	<p>Multiple Regression Analysis $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \alpha$</p> <p>Where,</p> <p>$\beta_i$ (i=0-3) are the regression co-efficient</p> <p>Y – Performance of Microfinance Institutions Kenya</p> <p>X_1 – Human Integration</p> <p>X_2 – Physical Integration</p> <p>X_3 – Organization Integration</p> <p>α -Unexplained variables</p>

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

The purpose of the research was to examine the perceived influence of information technology integration on performance of microfinance in Kenya. This chapter gives the results gained from the study and analyzed in line with the guiding objective. It further outlines data analysis, presentation and interpretation of the results

4.2 Response Rate

The research was conducted on 52 respondents to whom questionnaires were submitted to. The statistics analyzed were used to show the relationships between variables. Out of the 52 questionnaires, 48 questionnaires were duly filled and this represented a response rate of 92.3%. This rate of response was considered satisfactory for analysis to make deductions for the study (Mugenda and Mugenda, 2003).

Table 4.1: Questionnaire Return Rate

No. of questionnaires Returned	Target No. of respondents	Response Rate (%)
48	100	92.3%

The researcher personally administered the questionnaire, thus there was a high response rate (92.3%) as shown on Table 4.1. The researcher also got a chance to clarify the respondents' queries during data collection; although consideration was taken not to influence the outcome. This also reduced the effects of language barrier, hence, ensuring a high instrument response and scoring rate.

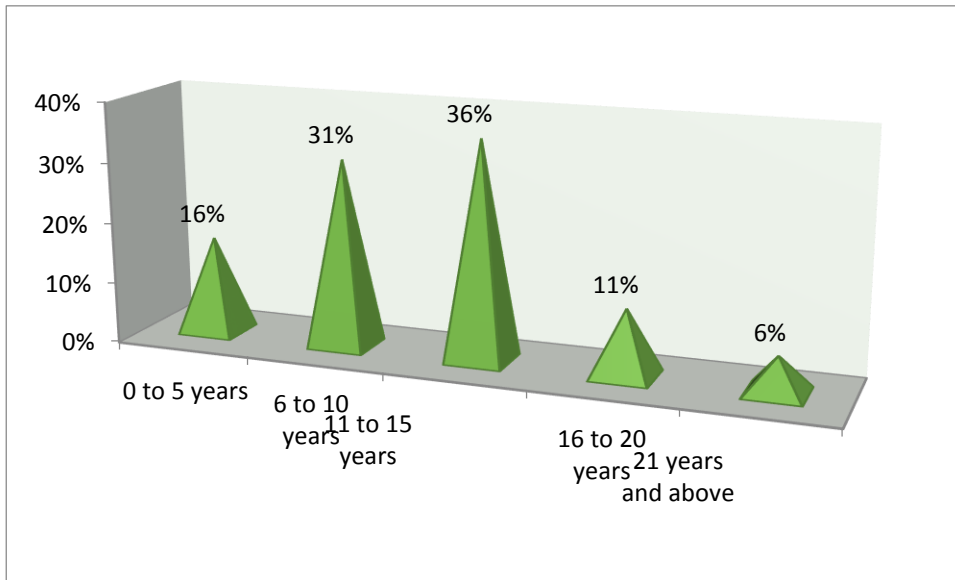
4.3 Organization Profile

The research aimed to get the profile of MFIs in Kenya. This was examined by looking at the number of employees as of the number of years of service as well as the number of Branches

4.3.1 Number of Years in Operation

The study pursued to get the year's micro-finance institution have operating. The study results are as presented in Figure 4.2.

Figure 4.2: Number of Years in Operation



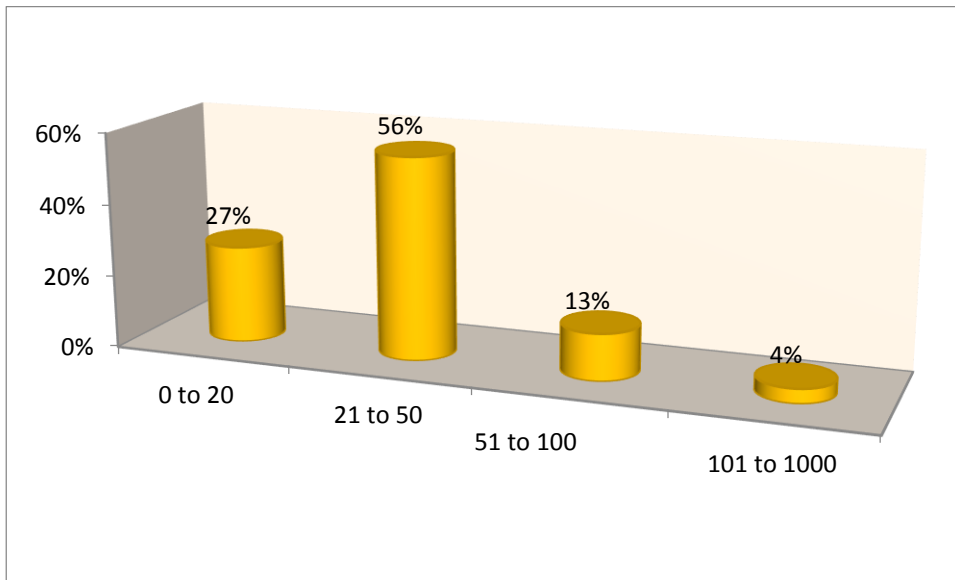
As per Figure 4.2, most of the respondents (36%) implied that their firm has been operating for 11-15 years, 31% indicated 6-10 years, 16% indicated 0-5 years, 11% indicated 16-20 years while 6% indicated 21 years and above. This is an indication that most institutions operating in the microfinance sector in Kenya have been in operation for a long period of between 11-15 years and thus higher chances of obtaining reliable data with regards to the effects of information technology integration on performance of microfinance in Kenya

4.3.2 Number of employees

The study aimed to determine the number of employees working in the institution under study.

The results are as presented in Figure 4.3 below;

Figure 4.3: Number of employees

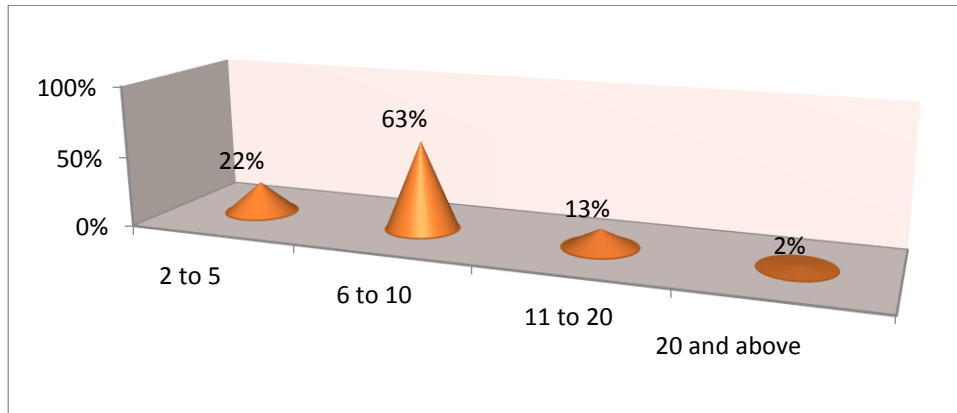


This showed most respondents (56%) implied their firms have 21-50 employees, 27% indicated less than 20 employees, 13% indicated between 51 to 100 employees while 4% indicated 101-1000 employees.

4.3.3 Number of Branches

The research attempted to determine the number of branches that the institution had. What was found out are as presented in Figure 4.4 below;

Figure 4.4: Number of Branches



As per figure 4.1 above, most respondents (63%) showed their firm has 6 to 10 branches, 22% indicated 2-5 branches, 13% indicated 11 to 20 branches while 2% indicated 20 branches and above.

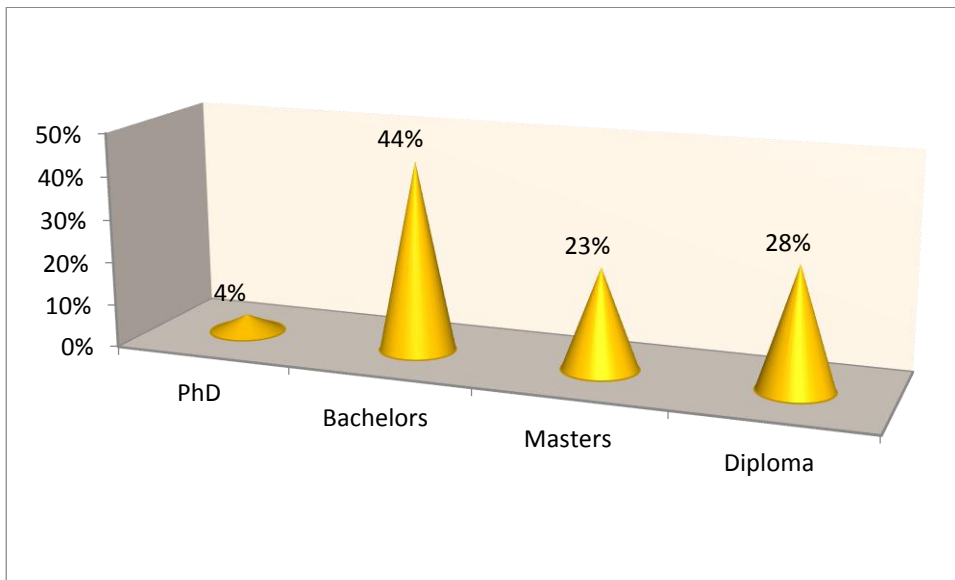
4.4 Demographic Information

This section discusses the demographic characteristics of those who participated in the study. These include, academic qualification of the respondents, job title and the years of experience.

4.4.1 Academic qualification

The researcher sought to find out the academic qualification of the employees at performance of microfinance in Kenya. The academic background of the employee could have significance in the study. The results showed that the majority of the respondents 44% had Bachelor's degree and 28% had diploma, 23% had Master's Degree and those who had PHD were 4%. The figure 4.5 below shows the levels of education for those who responded to the research.

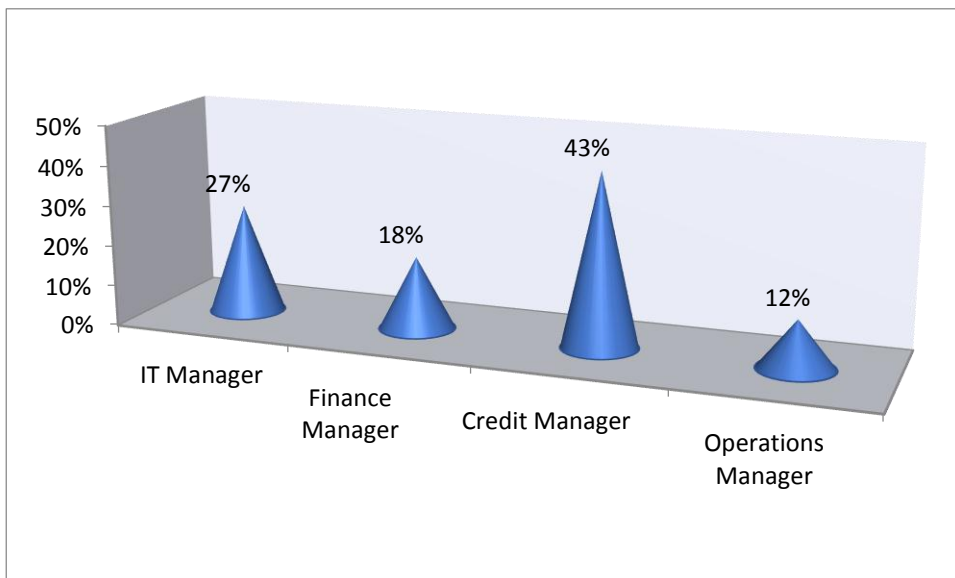
Figure 4.5: Academic qualification



4.4.2 Job title the Respondents

The researcher sought to establish the job title of the respondents. The majority of the respondents were in credit manager (43%) followed by IT manager (27%), finance manager (18%) and the rest (12%) were operations manager. This is has illustrated in Figure 4.6 below.

Figure 4.6: Job title the Respondents



4.4.3 Job Title

The researcher sought to identify the work experience of those responding in the organization. Job title is an important factor to an employee and the organization at which she/he is employed to.

Table 4.2: Job Title

	Frequency	Percent
0 to 2 years	2	4.2
2 to 5 years	12	25
6 to 10 years	24	50
Over 10 years	10	20.8
Total	48	100

From the table 4.4, majority (50%) had worked for the microfinance in Kenya for a duration in the range between 6 - 10 years followed by 25% who have worked for a period of between 2-5 years, followed by 10% who had served the organization for over 10 years. Those who had served in the microfinance for less than 2 years were the least at 4.2%. This implies that most employees had worked for microfinance in Kenya for a reasonable number of years and therefore a good sign of stability

4.5 IT Integration

The targeted to determine the level of IT integration in microfinance institutions in Kenya. The study results are as shown below.

4.5.1 Level of IT integration

The study sought to determine the extent to which those responding agreed on the Level of IT integration. The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.3.

Table 4.3: Level of IT integration

	Mean	Std. Deviation
Customer relationship management	3.043	1.335
Human resource management	3.830	0.666
Marketing management	3.894	0.595
Credit and collections management	3.076	1.277
Finance management	3.979	0.733

According to the study findings, most of the respondents indicated to a great extent that IT integration have been done in finance management (Mean=3.979), marketing management (Mean=3.894) and human resource management (Mean=3.830). In addition, respondents indicated to a moderate extent that IT integration have been done credit and collections management (Mean=3.076) and customer relationship management (Mean=3.043). This implies that MFIs in Kenya have mostly integrated IT in finance management, marketing management and human resource management departments.

4.5.2 IT workforce skill (Human Integration)

It was the interest of the researcher to establish the extent of agreement with various statements on IT workforce skill (Human Integration). The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.4.

Table 4.4: IT workforce skill (Human Integration)

	Mean	Std. Deviation
There is adequate skill to effectively use available IT resources	4.032	0.613
There is adequate risk management skills	4.096	0.465
There is adequate technical skills to formulate effective IT solutions in the institution	3.936	0.700
There is adequate skills for alignment of IT strategies with business strategies	3.411	0.374

As per the study findings, most respondents indicated to a very great extent that there is adequate risk management skills (Mean=4.096), there is adequate skill to effectively use available IT resources (Mean=4.032) and that there is adequate technical skills to formulate effective IT solutions in the institution (Mean=3.936). In addition, respondents indicated to a

great extent that there is adequate skills for alignment of IT strategies with business strategies (Mean=3.411). This is an indication that in micro finance institutions in Kenya there is adequate risk management skills, there is adequate skill to effectively use available IT resources and that there is adequate technical skills to formulate effective IT solutions in the institution

4.5.3 IT Infrastructure adaptabilities (Physical Integration)

Those responding were requested to show the degree to which they agreed on several statements on the IT Infrastructure adaptabilities (Physical Integration). The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.5.

Table 4.5: IT Infrastructure adaptabilities (Physical Integration)

	Mean	Std. Deviation
The institutions IT infrastructure is flexible	4.021	0.672
It is easy is possible to upgrade the institutions IT infrastructure whenever required	4.106	0.310
The institution is able to reach more customers as a result of globalization	4.064	0.564

As per the study findings, most of the respondents indicated to a very great extent that it is easy is possible to upgrade the institutions IT infrastructure whenever required (Mean=4.106), the institution is able to reach more customers as a result of globalization (Mean=4.064) and that the institutions IT infrastructure is flexible (Mean=4.021). This implies that in MFI's it is easy

is possible to upgrade the institutions IT infrastructure whenever required, the institution is able to reach more customers as a result of globalization and that the institutions IT infrastructure is flexible

4.5.4 IT administration abilities (organization Integration)

The study sought to establish the extent of agreement with various statements on the IT administration abilities (organization Integration). The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.6.

Table 4.6: IT administration abilities (organization Integration)

	Mean	Std. Deviation
The IT infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies.	4.025	0.523
The IT integration with numerous systems has improved customer satisfaction	4.325	0.231
The institutions IT infrastructure enables linkage with vendor systems	3.785	0.145

According to the study findings, most respondents indicated to a very great extent that the IT integration with numerous systems has improved customer satisfaction (Mean=4.325) and that the IT infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies (Mean=4.025). Further, respondents indicated to a great extent that the institutions IT infrastructure enables linkage with vendor systems (Mean=3.785). This implies that IT integration with numerous systems has improved customer satisfaction and that the IT infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies

4.6 Challenges facing IT integration

Those responding were asked to indicate the extent to which they agreed with various statements on the Challenges facing IT integration. The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.7.

Table 4.7: Challenges facing IT integration

	Mean	Std. Deviation
The cost of IT integration is high	4.266	0.444
Adequate professional development and training	4.192	0.396
Ability to accurately define IT requirement	3.987	0.478

As per the study findings, most respondents indicated to a very great extent the challenges facing IT integration are the cost of IT integration is high (Mean=4.266) and adequate professional development and training (Mean=4.192). In addition, respondents indicated to a great extent that the challenges facing IT integration is ability to accurately define IT requirement (Mean=3.987). This is an implication that cost of IT integration and adequate professional development and training are the challenges facing IT integration among MFIs in Kenya

4.7 Influence of IT integration on performance of microfinance in Kenya

Respondents were asked to indicate the extent of agreement with various statements on influence of IT integration on performance of microfinance in Kenya. The status of this variable was rated on a 5 point Likert scale ranging from; 1= To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent. The study findings are depicted in Table 4.8.

Table 4.8: Influence of IT integration on performance of microfinance in Kenya

	Mean	Std. Deviation
IT integration has contributed to increased profits in the institution	4.298	0.460
IT integration has reduced costs in operations of the institution	4.149	0.358
IT integration has enhanced customer service delivery in the institution	4.128	0.553
IT integration has increased market share of the institution	4.245	0.522
IT integration has increased operational efficiency	4.266	0.512
IT integration has facilitated development of new products	4.125	0.235

As per the study findings, most respondents indicated to a very great extent that IT integration has contributed to increased profits in the institution (Mean=4.298), IT integration has increased operational efficiency (Mean=4.266) IT integration has increased market share of the institution (Mean=4.245), IT integration has reduced costs in operations of the institution (Mean=4.149) and that IT integration has enhanced customer service delivery in the institution (Mean=4.128). Additionally, respondents indicated to a great extent that IT integration has facilitated

development of new products (Mean=4.125). This is an indication that IT integration has contributed to increased profits in the institution, IT integration has increased operational efficiency, IT integration has increased market share of the institution, IT integration has reduced costs in operations of the institution and that IT integration has enhanced customer service delivery in the institution

4.8 Regression Analysis

The regression model was $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \alpha$

Whereby Y is Performance of Microfinance Institutions Kenya; β_i (i=0-3) are the regression co-efficient; X_1 – Human Integration; X_2 – Physical Integration; X_3 – Organization Integration; And α -Unexplained variables

4.8.1 Model Summary

Table 4.9: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.916 ^a	.839	.799	1.211

a. Predictors: (Constant), Human integration, Physical integration, Organization integration

Source: (Researcher, 2019)

The results in Table 4.9 indicate that the human integration, physical integration and organization integration jointly had a significant effect on Performance of micro-finance institutions operating in Kenya e as shown by r value of 0.916. The R squared of 0.839 shows that the independent variables accounted for 83.9% of the variance on Performance of micro-finance institutions operating in Kenya.

4.8.2 ANOVA

Table 4.10: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.918	3	36.306	20.844	0.000
	Residual	76.648	44	1.742		
	Total	185.566	47			

a. Dependent Variable: Performance

b. Predictors: (Constant), Human integration, Physical integration, Organization integration

Source: (Researcher, 2019)

The ANOVA statistics show a significance level of 0.000 in the table above, suggesting that the model and its data can be used to draw definitive inferences. The critical value ($2.67 < 20.8444$) was lower than the calculated F, indicating that the above independent variables (human integration, physical integration and organization integration) were significantly influencing Performance of MFIs operating in Kenya.

4.8.3 Coefficients

Table 4.11: Coefficients^a

	Unstandardized		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.123	0.364		11.3269	0.000
Human integration	0.712	0.241	0.134	2.95435	0.005
Physical integration	0.567	0.264	0.142	2.14772	0.038
Organization integration	0.671	0.234	0.121	2.86752	0.007

a. Dependent Variable: Performance

Source: (Researcher, 2019)

The overall regression model for this model was:

$$Y = 4.123 + 0.712X_1 + 0.567X_2 + 0.671X_3 + \epsilon$$

Human integration have a positive influence on Performance of micro-finance institutions operating in Kenya. It indicates that any unit increase in the human integration will cause Performance of micro-finance institutions operating in Kenya to increase by 0.712. Increase in physical integration was confirmed to cause an increase in the Performance of micro-finance institutions operating in Kenya due to the positive effect by 0.567. Organization integration showed a positive influence on financial performance which means that it increases

Performance of micro-finance institutions operating in Kenya by 0.671 as a result of a unit increase.

4.9 Discussion of Findings

The study established that IT integration has contributed to increased profits in the institution, IT integration has increased operational efficiency, IT integration has increased market share of the institution, IT integration has reduced costs in operations of the institution and that IT integration has enhanced customer service delivery in the institution. In line with the study findings, Ghasemi, Habibi, Ghasemlo & Karami, (2019) noted that a simple way of improving organization performance is by enhancing productivity. The main areas in which organization can generate extra resource are the maximization of staff potential and the use of technology. In order to improve performance by using technology better, business players need comprehensive knowledge of their key processes. With a wide range of technological decisions it is essential for an organization to take calculated steps to using new technology with a particular focus of integrating the existing technology.

The study revealed that human integration, physical integration and organization integration have a positive influence on Performance of MFIs in Kenya. In tandem with the study findings García and Navas (2017) analyzed the relationship between information technology integration and success of an organization. The study showed overall impact of technological capabilities on organization's success. In a study by Alwan and Al-Zubi (2016) IT has been portrayed to provide companies with cheaper techniques (both tools and operations) to access opinions and positions of clients. Those advantages spread through various industries –for example, IT

integration to improve knowledge enabled the manufacturing sector in Tunisia to attract customer (Mouelhi, 2009).

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section sums up the parts covered in previous chapters in three sections. First, it summarizes the study findings, makes conclusions, and then makes some recommendations. The findings have been discussed relative to the questionnaire aspects. Conclusion and policy implications are based on the findings obtained in chapter four.

5.2 Summary

The findings presented in the study is based an analysis of 48 questionnaires received after data collection with a response rate of 92.3%, the researcher proceeded with analysis and summary of key findings. The main objective was to examine the effects of information technology integration on performance of microfinance institutions

The study established that MFIs in Kenya have mostly integrated IT in finance management, marketing management and human resource management departments. Also it was revealed that that in micro finance institutions in Kenya there is adequate risk management skills, there is adequate skill to effectively use available IT resources and that there is adequate technical skills to formulate effective IT solutions in the institution

The study established that in MFI's it is easy is possible to upgrade the institutions IT infrastructure whenever required, the institution is able to reach more customers as a result of globalization and that the institutions IT infrastructure is flexible. Further, it was revealed that IT integration with numerous systems has improved customer satisfaction and that the IT

infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies

The study revealed that cost of IT integration and adequate professional development and training are the challenges facing IT integration among MFIs in Kenya. It was also established that IT integration has contributed to increased profits in the institution, IT integration has increased operational efficiency, IT integration has increased market share of the institution, IT integration has reduced costs in operations of the institution and that IT integration has enhanced customer service delivery in the institution

5.3 Conclusion

The study concludes that MFIs in Kenya have mostly integrated IT in finance management, marketing management and human resource management departments. Also the study concludes that that in micro finance institutions in Kenya there is adequate risk management skills, there is adequate skill to effectively use available IT resources and that there is adequate technical skills to formulate effective IT solutions in the institution

In MFI's it is easy is possible to upgrade the institutions IT infrastructure whenever required, the institution is able to reach more customers as a result of globalization and that the institutions IT infrastructure is flexible. Further the study concludes that IT integration with numerous systems has improved customer satisfaction and that the IT infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies

Further conclusions are made that cost of IT integration and adequate professional development and training are the challenges facing IT integration among MFIs in Kenya. It was also

established that IT integration has contributed to increased profits in the institution, IT integration has increased operational efficiency, IT integration has increased market share of the institution, IT integration has reduced costs in operations of the institution and that IT integration has enhanced customer service delivery in the institution

Integration capabilities have a positive influence on Performance of micro-finance institutions operating in Kenya. It indicates that any unit increase in the human integration will cause Performance of micro-finance institutions operating in Kenya to increase by 0.712. Increase in physical integration was confirmed to cause an increase in the Performance of micro-finance institutions operating in Kenya due to the positive effect by 0.567. Organization integration showed a positive impact on financial performance which means that it increases Performance of micro-finance institutions operating in Kenya by 0.671 as a result of a unit increase.

5.4 Recommendations

The study makes the following recommendations;

The study recommends that the management of the MFIs need to adopt information technology integration to improve customer, supplier and internal process needs. It was determined that when IT dimensions are used, firms can reap more in terms of customer management, supplier management and internal firm management which improve organizational performance.

The study advises that, in order to improve organization efficiency, microfinance management should concentrate on the organizations activities associated with the change of practices, procedures and processes in a creative and innovative manner. This will improve microfinance performance

It is also important that in order to enhance profitability MFIs should focus more on human integration this will have a positive impact on performance of MFIs.

5.5 Limitations of the Study

Some of those responding were reluctant to provide information that they viewed as confidential to the company. Respondents were also reluctant to provide data for fear of using the information against them. Further, most of the targeted respondents had very busy schedules making it hard to fill in the feedback forms within the stipulated time. The stringent policies of the firms also lengthened the process due to many bureaucratic processes involved. The researcher addressed the issue by sharing the university's introduction letter and assuring respondents that any information obtained was treated for academic purposes to be handled in a confidential and pure manner.

The study's limitations included the limited time set aside for the research and the scope. This limitation was overcome by starting the research early in the period set aside. This ensured the maximum amount of time possible was spent in the research and last minute rush was avoided.

The population was small hence use or perception of IT integration and performance of microfinance institutions in Kenya

5.6 Suggestion for Further Studies

It will be necessary to conduct another study by drawing attention to other industries instead of MFIs industry so as to represent useful and reliable information which depicts actual events throughout all economic sectors. Crucial questions about where, when and how to reconfigure organizational assets, processes and route dependencies should be the subject of future scientific investigations

The study also advocates for more research to be conducted on IT integration in management of supply chains at both the national government and county governments.

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APPENDICES

Appendix I: Introduction Letter

University of Nairobi

School of Business

P.O Box 30197

NAIROBI

Dear Respondent,

RE: COLLECTION OF RESEARCH DATA

I wish to request for your few minutes to participate in this study. I am a student pursuing Master of Business Administration at the University of Nairobi and my topic is: Perceived Information Technology Integration and Performance of Microfinance Institutions Kenya.

You are requested to provide answers to the research questions listed in the questionnaire. The information you will provide will purely use for academic purposes and it will be treated with utmost confidentiality.

Your assistance will be highly appreciated.

Yours faithfully,

Ayaa Jemimah

Appendix II: Questionnaire

SECTION ONE: GENERAL INFORMATION

Organizational

1. Name of the Institution (Optional) _____

2. Number of Years in Operation

0 to 5 years [] 6 to 10 years []

11 to 15 years [] 16 to 20 years []

21 years and above []

3. Number of employees

0 to 20 [] 21 to 50 []

51 to 100 [] 101 to 1000 []

4. Number of Branches

1 [] 2 to 5 []

6 to 10 [] 11-20 []

20 and above []

Personal

5. Academic qualification

PhD [] Masters []

Bachelors [] Diploma []

Others (Specify) _____

6. What is your Job title

IT Manager [] Finance Manager []

Credit Manager [] Operations Manager []

7. Length of service with the institution

0 to 2 years [] 2 to 5 years []

6 to 10 years [] Over 10 years []

SECTION TWO: IT INTERGRATION

8. The questions in this section focuses on level of IT integration in the institution. For each of the following statements, indicate your opinion in a scale of 1 – 5; where (1) = To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent.

No	Rate the degree of IT usage in the following areas	1	2	3	4	5
1	Customer relationship management					
2	Human resource management					
3	Marketing management					
4	Credit and collections management					
5	Finance management					

9. The questions in this section deals with investments of IT integration. For each of the following statements, indicate your opinion in a scale of 1 – 5; where (1) = To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent.

No	IT workforce skill (Human Integration)	1	2	3	4	5
1	There is adequate skill to effectively use available IT resources					
2	There is adequate risk management skills					
3	There is adequate technical skills to formulate effective IT solutions in the institution					
4	There is adequate skills for alignment of IT strategies with business strategies					
No	IT Infrastructure adaptabilities(Physical Integration)					
1	The institutions IT infrastructure is flexible					
2	It is easy is possible to upgrade the institutions IT infrastructure whenever required					
3	The institution is able to reach more customers as a result of globalization					
No	IT administration abilities(organization Integration)					
1	The IT infrastructure in the institution tends to support continuous changes in the alignment of IT resources to business strategies.					
2	The IT integration with numerous systems has improved customer satisfaction					
3	The institutions IT infrastructure enables linkage with vendor systems					

10. The questions in this section deals with challenges facing MFIs in pursuing IT integration in Kenya. For each of the following statements, indicate your opinion in a scale of 1 – 5; where (1) = To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent.

No	Statement on challenges facing MFIs	1	2	3	4	5
1	The cost of IT integration is high					
2	Adequate professional development and training					
3	Ability to accurately define IT requirement					

In your experience, which other challenges would you say are facing MFIs in Kenya and these could hinder firm performance

SECTION THREE: PERFORMANCE

11. This section deals with performance of Microfinance Institution. For each of the following statements, indicate your opinion in a scale of 1 – 5; where (1) = To no extent, (2) = To a little extent, (3) = To a moderate extent, (4) = To a great extent, (5) = To a very great extent.

No	Statement on performance of MFI	1	2	3	4	5
1	IT integration has contributed to increased profits in the institution					
2	IT integration has reduced costs in operations of the institution					
3	IT integration has enhanced customer service delivery in the institution					
4	IT integration has increased market share of the institution					
5	IT integration has increased operational efficiency					
6	IT integration has facilitated development of new products					

Appendix III: List of MFIs in Kenya

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

Source: CBK report (2017)