EFFECT OF THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY ON PERFOMANCE OF COMMUNITY BASED ORGANIZATIONS IN KITUI COUNTY, KENYA

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D53/OL/26620/2013

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT FOR THE AWARD OF DEGREE IN MASTER OF BUSINESS ADMINISTRATION (MANAGEMENT INFORMATION SYSTEMS) OF KENYATTA UNIVERSITY

May, 2017

DECLARATION

I, hereby declare that this research project is my original work and has not been presented for a degree in any other university

Signed..... Date.....

Peter Muema Munyao

D53/OL/26620/2013

I confirm that the work in this project was done by the candidate under my supervision

Signature: ……..... Date…….

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DEDICATION

This project is dedicated to my late Mother Agnes, my wife Margaret and my daughters Jane, Sandra and Gloria.

ACKNOWLEDGEMENT

I first and foremost acknowledge the Almighty God for gift of life and good health. I recognize with honor and respect the relentless efforts of my supervisor, Ms. Gladys Kimutai for her guidance. I recognize the efforts of my lecturers for their immense contribution during my course work. To my classmates, thank you for the lively and informative discussions.

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OPERATIONAL DEFINITIONS OF TERMS

Community Based Organizations: These are groups of people with a common Objective of solving problems of the community from where they operate from.

Government ICT Policy: An action plan by government of Kenya to ensure availability, reliable, and affordable ICT services to the citizens

Information and Communication Technology: A Technology, whose objective is to gather process, store, and retrieve, present and transmit information by the CBOs

ICT Infrastructure: These are computing resources required for the operations of an ICT system of the CBO's

ICT Skills: These are proficiencies required by CBO's staff to use ICT systems

Management Support:	This is the support extended to the CBO's in terms of acquisition of the necessary hardware and software resources needed by the CBO, training of staff and initiation of projects by the management of the CBO

ABBREVIATIONS AND ACRONYMS

CA	Communication Authority of Kenya
CBO	Community Based Organization
CEO	Chief Executive Officer
ICT	Information and Communication Technology
NGO	Non-Governmental Organization
SPSS	Statistical Package for Social Sciences
VRIO	Value, Rarity, Imitability, Organization

ABSTRACT

Information and Communication Technology is being deployed globally by organizations to improve efficiency, customer service and acquire a portion of the global market. It is paramount that organizations that want to maintain competitive edge in this era of cut throat competition embrace Information and Communication Technology as a way of satisfying the ever increasing demands of customers. The performance of CBOs in Kitui County is affected by Governance, efficiency, Political interference, inadequate funding, poor management, communication structures and non-adoption of technology .The aim of this study was therefore to investigate effect of the use of Information and Communication Technology performance of Community Based Organizations in Kitui County, Kenya. The study specifically sought to investigate the effects of Information and Communication Technology infrastructure, Information and Communication Technology skills, Information and Communication Technology services and Government policy on performance of Community Based Organizations in Kitui County, Kenya. The study used descriptive research design. The target population was 168 managers in charge of Community Based Organizations in Kitui County, Kenya. Stratified random sampling was used to select a sample size of 85 Community Based Organizations from where one respondent per Community Based Organizations was chosen. The study used primary data using a questionnaire which contained both closed and open ended questions. The quantitative data was analyzed by use of descriptive statistics which included frequency distribution tables, mean and standard deviation while the qualitative data is presented in prose form. Inferential statistics which entailed use of a regression model to establish the form of relationship between the variables. Tables, charts and graphs were used to present data. The study revealed that Community Based Organizations had insufficient computer hardware resources and that Information and Communication Technology Infrastructure had helped them enhance communication amongst themselves and with other stakeholders.Management supported the Community Based Organizations to undertake preventive maintenance. It was found the staff had adequate Information and Communication Skills and that they were aware of the existence of the Government Information and Communication Technology Policy. The study concluded that the Information and Communication Technology infrastructure, Management support and government. Information and Communication Technology policy influenced the performance of the Community Based Organizations. The national government should subsidize the costs of the computing devices meant for the Community Based Organizations. More investment should be made in computing and human resources in order for the Community Based Organizations to improve their performance.The staff of the Community Based Organizations ought to be regularly undergoing training on Information and Communication Technology in order for them to improve their skills. The Government should consider developing local content in order to facilitate dissemination of information to as many members of Community Based Organizations as possible.

CHAPTER ONE

INTRODUCTION

1.1Background of the study

Information and communication Technology is nowadays widely used by organizations to improve performance. ICT is being wide utilized enhance to service delivery and customer service. Use of ICT ensures resources are used optimally thereby reducing operational cost. Further, ICT is being used in marketing products globally without being restrained by boundaries. According to Burhalis (2003), ICT has given huge impact to operations, structures and strategies of firms. The use of ICT not only leads to saving of costs and resource optimization, and it also leads to improved customer service (Ashraf & Murtaza, 2008). Indeed use of ICT has become a way of live in all spheres of life.

Information and Communication Technology provides new ways of storing, processing information in an organization as well as exchanging information with their stake holders as well (Kollberg & Dreyer,2006). Growth in ICT enables organizations to become more competitive. Using ICT in organizations enables transparency and facilitates information sharing (Shanker, 2008). Fullantelli and Allegra (2003) states that ICT gives organizations a wide range of possibilities for enhancing their competitiveness and provides mechanism for them to acquire new markets. CBOs undertake projects that include health, water, sanitation, hygiene, education, income generating activities, recreational activities among others

(Charamba, 2002).Further, firms must convert client's requirements into objectives for operations (Hayes & Wheelwright, 2008).

All organizations want to remain competitive and retain their market share. A strong competitive advantage is driven by customer needs and aligns the organization's resources with its business opportunities (Neo, 2008). ICT speeds up work processes so that client response is enhanced (Capon, 2008).Use of ICT enables quick and timely delivery of services and products .Secondly, reductions in processing time can only be accomplished by streamlining and simplifying processes and value chains to eliminate non-value-added steps such as rework and waiting time (Capon, 2008).

ICT is a technology that handles activities such as gathering, processing, storing, retrieving, transmitting and presenting information (Yu, 2010). Herselman and Hay (2003), describe ICT as technologies that support the communication and co-operation of "human beings and their organizations" and the "creation and exchange of knowledge.

1.1.1 Organizational Performance

Highly competitive markets require that firms must continuously improve on their performance (Arslan & Staub, 2013). Performance of an organization comprises of three expected outcomes namely financial performance, product market performance and

shareholder return (Richard, et al. 2002.Competitive advantages for firms that have adopted ICT in their business processes is greatly influenced by evolution of technology which changes industry infrastructure and business operations (Ongori & Migiro, 2010) .Recent studies have been done at three levels to determine the relationship between IT investment and organizational performance. These levels are the country level (Dewan&Kraemer, 2010), the industry level (Jorgenson, 2010) and the firm level (Dewan&Min, 1997).

Studies carried out in the early 1980's and late 1990's failed to support relationship between IT investments and performance (Jorgenson, 2010).According to Bynjolsson and Hitt(2013) ,this is due to the then little portion of the economy that IT represented.Sichel(2007),further corroborated these findings on the US capital stock ,for which the IT stock capital was part of . The total US ICT capital investment was less than 10 percent out of the entire capital investment (Dedrick & Kraemer, 2003). Dewan and Kreamer (2010) while investigating aggregate data across 17 developed nations in the period 1985-1992, discovered that these nations were getting a positive and significant return on their IT investments and concluded that IT investments contributed to output and organizational performance at a disproportionate rate to their factor share in production. According to Schreyer (2009), IT contributed significantly to economic growth for all G-7 countries in the period 1990-1996.

1.1.2 Information and Communication Technology

The adoption of ICT by CBOs facilitates storage of information, processing, transmission and exchange of information within themselves as well as with their partners (Kollberg & Dreyer, 2006).According to Hollow (2005), ICT adoption by CBOs is a resource which can be used to improve existing development initiatives across Egypt. A study by Jorge and Juan (2010) to determine whether firm's performances are enhanced by use of internet for 9 CBOs was carried out in Daniel Hernandez, Peru and this was found to be the case. The staff in CBOs resemble those in small businesses, each member takes on several roles (Dunn, 2008).This is necessary factor when considering adoption of Technology(Brockway,2001) Access to ICT can significantly improve the management of CBOs and the quality of service that CBOs provide to community(Drucker,1999).

In Kenya, Communication Authority of Kenya provides Community ICT access points/Telecentres(CA,2013).The community centers are communal ICT access points that aim to reduce the per -capita cost of using ICT services, by minimizing the cost of the equipment and payments for services. The idea is to facilitate organized social groups to integrate ICT services in their daily activities; in order to improve their livelihoods. This was deployed in four such centers. Each community center received a server, two computers, a printer and Internet connectivity for, at least, one year. Services provided by the centers

include computer Services, data (internet and email), ICT training, typing and printing services.

1.1.3 Community Based Organization's in Kitui County, Kenya

CBOs in Kitui County supplement government's efforts delivering service in the following sectors: Health, Environmental conservation, water and sanitation, youth, food sustainability and Education. According to the Ministry of Gender, Sports, Culture and Social Services of Kenya (MGSCSS, 2008), there are around 90,000 CBOs in Kenya. Kenya's long term development strategy otherwise known as vision 2030 whose mandate is to create a globally competitive and a thriving country by 2030 is partly premised on rural areas economic activities which will play big role in achieving this dream (Government of Kenya, 2008). CBOs play a big role towards realization of this dream. There are 168 registered CBOs in Kitui County whose mandates are in line with Government's vision 2030.

Leadership development, networking with both local and external organizations and registration with an official public agency are identified and discussed as sustainable strategies to strengthen CBOs, improve upon their service delivery standards and place them in a position to tap available opportunities to develop the communities they are located (Opare, 2007).Information and Communication Technology can be used to aid service delivery and tap available opportunities. According to Revesz, (2009) CBOs in rural areas act

as mediators between rural population and other partner's .According to Mwaura and Karanja (2014), CBOs main role is aid communities by providing technical and financial support. According to Koggel (2009), people can be treated as agents of change as way of according them a greater say and control of their resources and decisions that affect their lives, thus, the CBOs can be used as change agents towards improvement of lives of the communities in which they operate from. In rural areas, CBOs supplement family work, especially in activities that require collective action (Diez, 2000). According to Wanjohi (2010),CBOs in Africa undertake activities to control and forestall spread of diseases .CBO's fill gaps in at community level in terms of service delivery and provide suitable methods of delivering health services to communities (Fishers, 2002). Strong and sustainable CBOs are important agents for sustaining programs at community level (Speers & Perkins, 2006).

CBOs in Kitui play a key role in filling the gaps at the community level. The gaps in service delivery are especially huge due to the high poverty levels in the county which stands at 63.1 percent, according to (KNBS, 2012).

1.2 Statement of the Problem

According to Chen (2002), organizational performance means the "transformation of inputs into outputs for achieving certain outcomes. With regard to its content, performance informs about the relation between minimal and effective cost (economy), between effective cost and

realized output (efficiency) and between output and achieved outcome (effectiveness)".Two out of every three inhabitants of Kitui County, which has a population of 1,012,709, live on less than a dollar a day (KNBS, 2009).This is an indication of the high poverty levels in the county. This being the case, there is an enormous need for innovative grassroots community development initiatives (Mutia, 2014). Good performance by the CBOs means they are meeting their objectives .Nyamu (2015) notes 25 percent of CBOs registered are carrying out their mandates while the rest remain inactive because they are not able to acquire the necessary resources required to operate efficiently. Nyamu (2015) notes that most CBOs hardly survive for two years. Although CBOs have made efforts to mobilize resources towards the implementation projects, it is noted that weak resource base has remained a major challenge that has contributed to stagnated or collapsed of noble initiatives (Speer & Perkins, 2006).The performance of CBOs in Kitui county is affected by Governance, efficiency, Political interference, inadequate funding, poor management, communication structures(Nyamu,2015) and non-adoption of technology (Mumo,2005).According to Ritchie and Brindley (2005) ,ICT plays a very important role in the performance of organizations

There has been little research done on effects of use of ICT on performance of CBOs.Most studies have concentrated on implementation (Kiboye, 2015) rather than evaluating the performance realized upon adopting ICT by the CBOs. A study by Waweru (2016) shows the adoption and use of ICT by Agricultural extension officers of CBOS in Buuri Sub County,

Meru, Kenya is very high. Despite the perception of the benefits of ICT in both public and the private sectors; there is a sluggish rate of ICT adoption in the country to achieve performance (Waweru&Wanjugu, 2015).The purpose of this study was therefore to investigate effect of use of ICT on performance of performance of CBOs in Kitui county, Kenya

1.3 Research objectives

1.3.1 General Objective

The General objective of the study was to examine the effect of Information and Communications Technology on performance of CBOs in Kitui County, Kenya

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

i. To determine the effect of ICT infrastructure on performance of CBOs in Kitui County, Kenya.

ii. To establish the effect of ICT skills on performance of CBOs in Kitui County, Kenya

iii. To assess the effect of ICT Management support on performance of CBOs in Kitui County, Kenya.

iv. To assess the effect of ICT Services on performance of CBO's in Kitui County, Kenya.

v. To determine how Government ICT policy influences the relationship between ICT use and performance of CBOs in Kitui County, Kenya

1.4 Research Questions

The researcher was guided by the following research questions

i. How does ICT Infrastructure affect performance of CBOs in Kitui County, Kenya?

ii. How do ICT Skills affect performance of CBOs in Kitui County, Kenya?

iii. How management support affect performance of CBOs in Kitui County, Kenya?

iv. What is the effect of ICT services on performance of CBOs in Kitui County, Kenya

v. How does Government ICT policy influence the relationship between ICT use and performance of CBOs in Kitui County, Kenya?

1.5 Significance of the study

The findings of the study will contribute towards designing rational and sustainable measures to improve performance of Community based organizations in Kitui County. The improved performance will trigger demand for more employment opportunities and thus reduce poverty incidences within the county. Top management of the Community Based

Organizations will find the study useful in understanding their roles in decision making, resource allocation and motivation in as far as implementation of ICT projects in their organization is concerned.

ICT managers from the CBO fraternity and other stakeholders who may be interested in improving service delivery will learn from the study how to constitute a team and assemble the required resources for successful implementation of ICT. Future related studies can be carried out by Scholars and researchers on basis of this. The findings of this study will stimulate interest for further research by researchers and scholars

1.6 Scope of the Study

The percentage of residents in Kitui County residing in rural areas is 86.2 percent compared to the national average of 70 percent (KNBS, 2010). Most CBOs operate in rural areas. The association between service awareness and service use and CBO engagement is stronger in rural than in urban areas (Kakietek, 2013) .This is what informed the choice of Kitui County as the location of study. The high poverty levels as well as large number of CBOs in Kitui also contributed to choice of Kitui. The Kitui County borders Tharaka-Nithi and Meru counties to the north, Embu to the northwest, Machakos and Makueni counties to the west, Tana River to the east and southeast, and Taita Taveta County to the south. The study was carried out between August 2016 and September 2016 in the 8 sub counties of Kitui. The county has many CBO's but the registered are 168.The 168 CBO's are stratified into 6

sectors, which includes Health, education, youth, water and sanitation, environment and conservation and food sustainability. The study involved 85 managers of the Community Based Organizations in Kitui County, Kenya. The 85 respondents were the managers of the CBOs as they have clear understanding of the operations of the CBOs.They are involved in sourcing for funds which is necessary for operations of CBO's.

1.7 Limitations of the study

The limitations encountered were getting the accurate data from respondents as some of them were not be tech-savvy and some were also illiterate. The road infrastructure is poor and this slowed down data collection. Another challenge encountered was asking for information that in some instances appeared to be sensitive by the management and which might expose them to competition or fear of losing their jobs after ICT adoption.

The researcher structured the questions in a manner that made the respondents understand them easily in order to mitigate against the challenges. The researcher and his team used motor bikes where the roads are inaccessible. A letter from the University introducing the researcher and his team and seeking the respondents' co-operation was presented to the respondents to allay any fears they might had. The researcher explained to the respondents that the information gathered would only be used for the purpose of the study.

1.8 Organization of the Study

This project is structured as follows: the foregoing chapter one provides the research background, research objectives, significance of the study and the scope of the study and limitations of the study. Chapter two presents literature review on the ICT adoption and performance of CBOs in Kitui County, Kenya, theoretical review, empirical review, summary of literature review and research gaps and the conceptual framework. Chapter three presents research design, target population, sampling design and size, data collection instrument and procedure, validity of the instrument used, reliability of the instrument, data analysis and presentation and ethical consideration. Chapter four presents the response rate, reliability analysis, demographic information, ICT infrastructure, management support, ICT government policy, ICT services, CBO performance, multiple regression analysis and ANOVA. Chapter five presents summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains literature related to the study and has three parts. Part one highlights the theoretical review on ICT adoption and performance of CBOs in Kitui County, Kenya. The second part reviews empirical literature while the third part describes the conceptual framework.

2.2 Theoretical Review

The section involves reviews of relevant theories and models that support the adoption of ICT and performance of CBOs and which were critical in guiding the study. The theories are Resource Based Theory, Decomposed Theory of Planned Behavior and Task-Technology Fit Theory.

2.2.1 Resource Based Theory (RBT)

This theory was developed by Birge Wenefeldt in 1984.The theory acknowledges that firms achieve competitive advantage and superior firm performance through synergistic mix of valuable, rare, inimitable and non-substitutable resources that they possess (Barney, 1991). Further, RBT asserts that firms use these resources to implement strategies by effectively and

efficiently developing capabilities that can be leveraged to sustain competitive advantage (Barney, 1991).The theory further emphasizes analysis and identification of firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities and intangibles as an organization. According to RBT proponents, it is much more feasible to exploit external opportunities using existing resources in a new way rather than trying to acquire new skills for each different opportunity. In RBT model, resources are given the major role in helping companies to achieve higher organizational performance. There are two types of resources: tangible and intangible. Tangible assets are physical things. Land, buildings, machinery, equipment and capital. Physical resources can easily be bought in the market so they confer little advantage to the companies in the long run because rivals can soon acquire the identical assets while intangible assets are everything else that has no physical presence but can still be owned by the company (Anand, Wamba&Sharma, 2013).

Brand reputation, trademarks, intellectual property are all intangible assets. Unlike physical resources, brand reputation is built over a long time and is something that other companies cannot buy from the market. The RBT's underlying premise is that a firm differs in fundamental ways because each firm possesses a "unique" bundle of resources-tangible and intangible assets and organizational capabilities to make use of those assets (Anand, Wamba&Sharma, 2013). Each firm develops competencies from these resources, and when developed especially well, these become the source of the firm's competitive advantage (Pearce & Robinson, 2007).

The theory therefore emphasizes on the internal resources of the firm as the source of performance and competitive advantage, rather than the external environment. In regard to this study, the following factors can be viewed as forming bundles of firm assets important to the firm and for inclusion in the framework: computing resources and capabilities, top Management Support, ICT skills and human capital. Adoption of ICT by utilization of the resources can be used to develop competencies which in turn improve the performance of the CBO's.

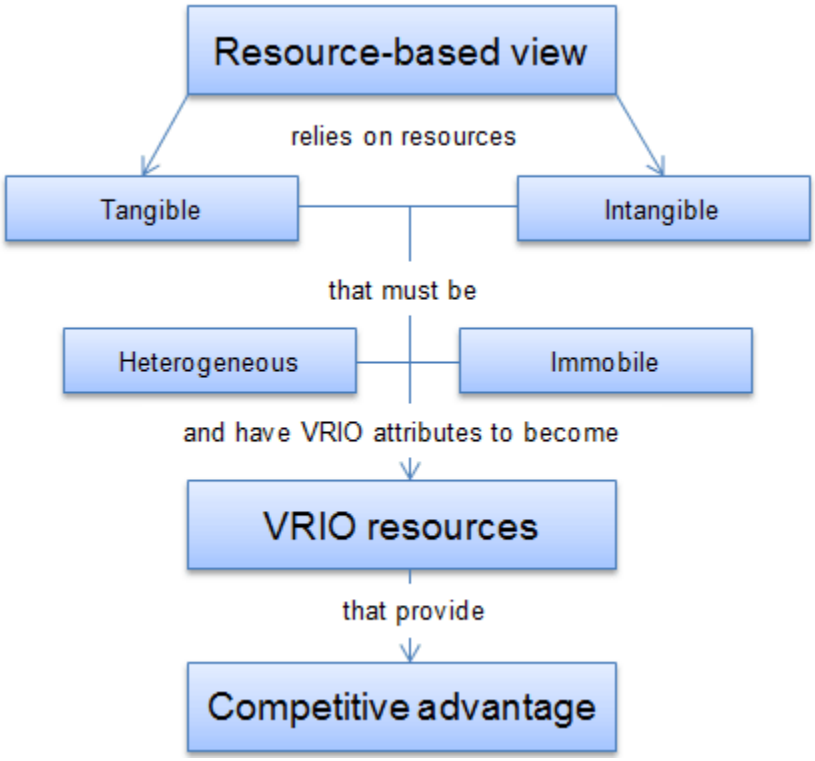

Figure 2.1 Resource Based Theory

SOURCE: Barney (1991)

2.2.2 Task-Technology Fit Theory (TTF)

The theory was proposed by Goodhue and Thomson (1995). TTF theory assumed that information technology is more likely to have a positive effect on individual performance and be used if the capabilities of information technology match the task that the user must performed (Goodhue & Thompson, 1995) .To explain the linkage between information technology utilization and individual performance, they developed a conceptual model of technology-to-performance chain. This conceptual framework was based on two separate research streams: first, the utilization of information technology with its antecedent of attitude and behavior, and second, the "fit focus" evident in research investigating the performance of individual information technology user.

Venkatraman (1989) discussed the concept of "fit" assessment in strategy research comprehensively with six alternative perspectives and approach of fit. Fit as moderation perspective; effect of fit as a moderating variable of an independent variable (predictor variable) on dependent variable (criterion variable). Fit as mediation perspective; an existence of intervening (indirect) effects between an antecedent variable and its consequent (criterion) variable. Fit as matching perspective; fit is a theoretically defined match between two related variable.Fit as gestalts; gestalts could be defined as the degree of internal coherence among a set of theoretical attributes (fit as on the identification of different group). Fit as profile deviation; the degree of adherence to a specified profile. Fit as co-variation; a pattern of co-variation or internal consistency among a set of theoretically related variables.

Goodhue and Thompson (1995) indicate that the fit between task characteristics and features of information systems provide a conceptual basis for testing the quality of individual decision-making. System information helps users by providing information that can be used individually to carry out their duties. Therefore, the strong relationship between information technology and individual performance (Teo & Men, 2008) or utilization (Strong et al. 2006) is the fit between information technology that provides information to users and information needed to the task that must be done.

The TTF theory proposes that a better fit between technology and task will lead to better Performance. Goodhue and Thomson (1995) in their study observe that there is supportive evidence of TTF as a function of system characteristics and task characteristic, and strong evidence of performance in which TTF and utilization must be included. In the study, as proposed by the TTF and as explained above, adoption of ICT by CBO's can lead to improved performance. The fit between the task and technology as used in the study are the relevant ICT skills and the appropriate ICT resources adopted in order to enhance performance.

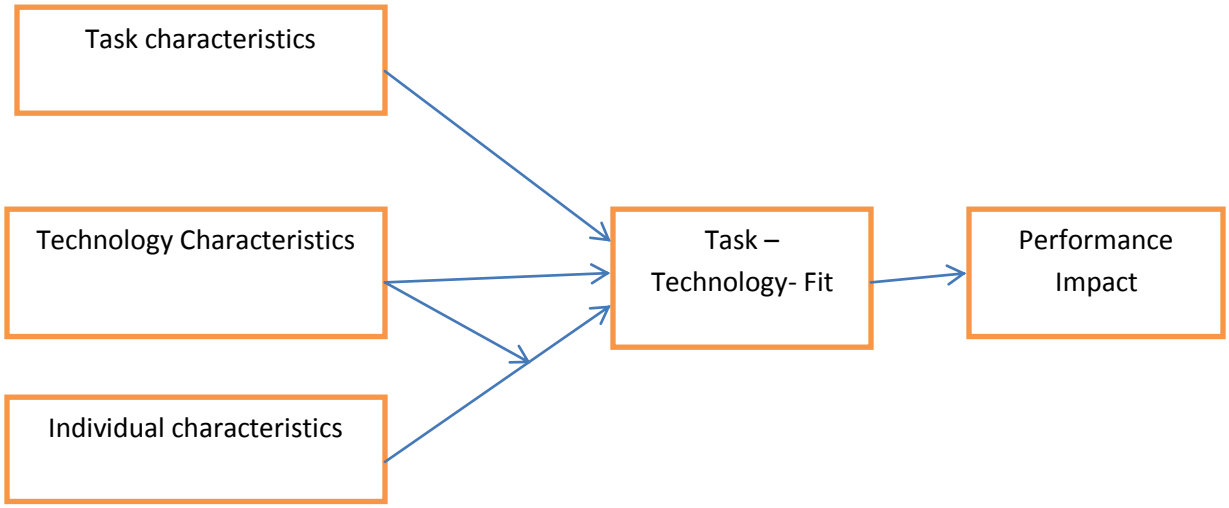

Figure 2.2 Tasks –Technology Fit Theory

Source: Goodhue and Thomson (1995).

2.2.3 Decomposed Theory of Planned Behavior (DTBP)

This theory developed by Taylor and Todd in 1995 is an extension of Theory of Planned Behavior. Taylor and Todd (1995) extended Theory of Planned Behavior by decomposing the attitudinal belief, normative belief, and control belief into several dimensional constructs to provide higher descriptive power and a more accurate understanding of the antecedents of behavior. Koeder et al. (2011) in their study to identify the factors that encourage consumer to purchase e-book reader in Japan, with the focus on normative factors. They found that attitude towards connected e-book readers were the most important factor contributing to purchase behavior. Goodhue and Thompson's (1995) research describes the relationship between the task requirements of the user and the functionality of the system and their impact

on utilization. In their research, Goodhue and Thompson suggest that utilization ideally be measured as the proportion of times users choose to utilize or use system.

In regard to the study, the CBO members' attitudinal beliefs, normative belief and control beliefs can lead them to utilize ICT with the aim of improving their performance. Performance of the impacts of the CBO will occur when the technology meets the users' needs and provides features that support the fit of the requirements of the tasks. The roots of concept of Perceived behavior control are grounded in the Self-Efficacy Theory (SET).

Bandura (1986) defined self-efficacy as "the judgments of how well one can execute courses of action required to deal with prospective situations. Features that support the fit of the requirements are in essence the ICT Infrastructure as described in the conceptual framework. ICT skills in the study are the judgments that show how well one can execute courses of actions required to deal with prospective situations

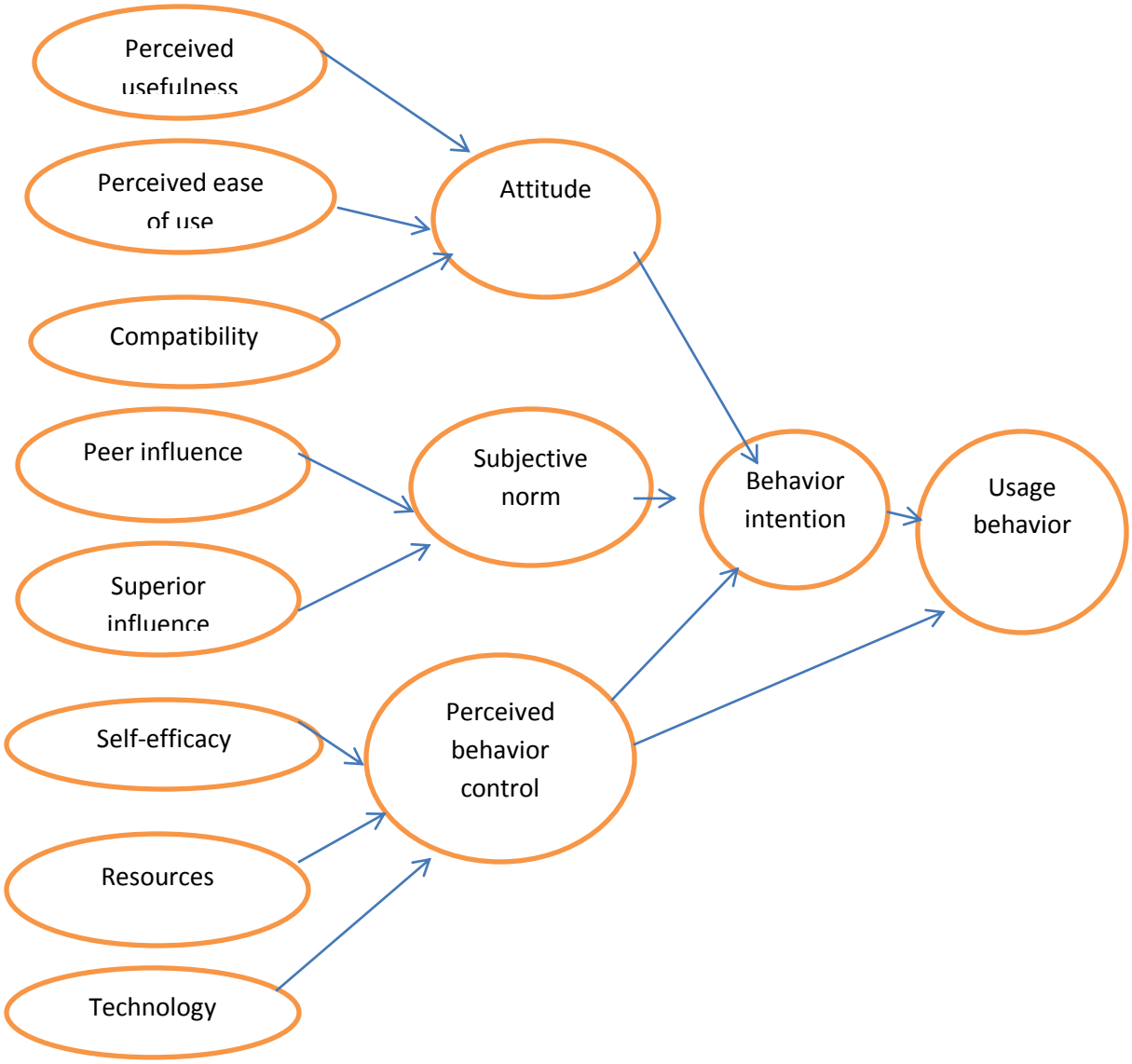

Figure 2.3 Decomposed Theory of Planned behavior

Source: Goodhue Thomson (1995)

2.3. Empirical Review

CBOs that engage in Critical reflective practice use ICT to gain Competitive advantage and help sustain their position of leadership (Ramasubramanian, 1997). Ramasubramanian further argues that CBOs that advocate for social change have the potential to become centers of knowledge production and use when they inevitably decide to use ICT. Van Ark and Piatcovski (2004) studied ICT investment patterns and their impact on economic performance using two sets of countries considered to be at different levels of economic development as reference points (the old and the new Europe respectively). They concluded that there is a trend toward convergence in Investment in ICT capital which was also found to be an important source of productivity growth in both types of countries. There is a positive relationship between ICT investment and performance (Indjikian & Siegel, 2005). It is widely acknowledged that ICT expansion is changing the way business is done (Barnes & Hinton, 2007).

2.3.1 Performance of Community Based Organizations

Community Based Organizations work through people centered modes of development such as availability of micro-finance; community participation in development ensuring community health education and infrastructure improves over time (Clark, 1999). Kleemeier (2000) examined water projects managed by CBOs in South Africa and found 63 percent of them are performing poorly due to financial mismanagement. Rural organizations with at least one employee dedicating to teaching others on the use of ICT in service delivery are

more successful in operations in operations and performance (Standish Group, 2005). The ability for firms to compete with others and innovate can be actualized by adopting ICT (Obijiofor *et al.*, 2005).

In a study to investigate challenges of projects implementation of CBOs goat breeding in Meru district, Kenya, Mugambi(2008) noted there was general lack of ICT adoption which in turn affected managerial capacity of local community to implement project ,data collection and storage. According to the Ministry of Health report (2010), CBOs have bridged the gap in providing Home Based Care for HIV/Aids patients which has reduced death rates by 7 percent. ICT allows clients to give real time feedbacks which enable companies to act quickly to their needs and determine new market niches (Apulu & Latham, 2010). United States Agency International Development (USAid) CBO impact assessment report (2011), states that households participating in the CBO program were significantly more likely to participate regularly in savings groups and borrow money than households in the other study groups.

Further, Harrison (2010) in his study listed thirty six different causes of organizational poor performance and non-adoption of technology was top of the list. Harrison noted further that only appropriate technology should be adopted in consideration of simplicity, compatibility and cost.

ICT adoption according to Harrigan *et al.* (2010) has made SMEs to have effective communication with their customers, improve customization, market awareness, marketing costs reduction, escalation in loyalty of customers, increased sales capacity, profitability and performance. These however create customer based, competitive advantage and boast growth of enterprises. CBO performance can be measured by looking at whether there are reduced operational costs and increased revenues among the CBOs, increase in market share, improved efficiency, poverty reduction and improved health and water services delivery upon adoption of ICT.

2.3.2 Information and Communication Technology Infrastructure and Performance

Gerwin (2009), describes ICT as technologies that support the communication and co-operation of "human beings and their organizations" and the "creation and exchange of knowledge. Nordasw and Pier martini (2004) also asserts that telecommunications has a significant positive effect on trade flows. Rwashana and Williams (2006) states that ICT Infrastructure comprises of a range of electronic digital and analog devices such as radio, television, telephones , computers, electronic-based media such as digital text and audio-video recording, and the internet, but excludes the non-electronic technologies. Evidence from more recent studies suggest a positive relationship between ICT investment and firm performance (Bayo & Lopez, 2007)

A telephone is increasingly being used to sell by many industries and as a channel of marketing .The telephone as a device enables the user access the internet.

Telecommunication whether mobile or fixed plays a vital role in facilitating connectivity which is part of ICT infrastructure. According to study done by Makodiah(2013) to investigate the role played by mobile phone in diffusion of dairy goat rearing in Mutonguni,Kitui county, 99 percent of farmers interviewed own or have access to mobile phones with a key significant fact that 95 percent of these farmers use mobile phone money transfer services at least once in a month. Of the 100 respondents, 1 percent was found not to own a phone, 70 percent owned a phone while 29 percent had access to mobile phone. Makodiah further infers that only 27 percent of the mobile users had a challenge in using the features of their devices.

.ICT investment comes in form of infrastructure and investing in human capital with appropriate. There is a positive significant relationship between ICT investment and performance of business units of universities in South West Nigeria (Binoyu, 2014)

2.3.3 Information and Communication Technology skills and Performance

ICT skills play pivotal role in adoption of ICT in any sector. Stehr (2000) explained that individuals who are poorly exposed to technology training while in schools often find it difficult to embrace technology adoption, and even train in technology while at work in the CBOs. Despite having a rich ideological ICT strategy in businesses, adoption in Kenya commercial institutions has proved to be an uphill task due to gaps in her policy and financial constraints (Browne, 2002). Lack of ICT skills is one of the issues that are faced by

adopters and non-adopters in the use of computers and internet (Apulu, Lathama, & Moreton, 2013). Schware (2003), states that ICTs are being integrated into procedures, structures, and products throughout businesses, governments, and communities. Mansel (2006) argued that the CBOs, particularly those that are in rural contexts, only attract people with lower levels of training. Sitta (2007) in his study argued that training and integration of ICT in CBOs empowers the staff and organizational leaders into judicious and effective service delivery to the community.

Vokurka and O'Leary-Kelly (2010) argues that while other countries have reported up to 41 percent integration of ICT the proportion remains substantially low in Africa, Kenya included. A study by Tumuti (2011) observed that CBOs staff must have adequate knowledge and skills to enhance data collection and entry. According to Callum and Jeffrey (2013) who investigated the influence of ICT skills to students and adoption to mobile learning, students with strong basic ICT skills have a higher adoption rate. They further assert that perception of mobile learning as easy and useful is greater for students with mobile technology skills.

. Nevertheless, past literature suggests that most CBOs and other community-run institutions are greatly challenged with regards to skilled ICT staff as opposed to larger organization with higher financial capabilities (Tumuti, 2011; Sitta, 2007; Mansel, 2006; Standish Group, 2005).

2.3.4 ICT Management Support and Performance

The characteristics of CEOs should be taken into consideration in the investigation of strategic activities, such as the adoption of innovation, including IT as a new technology (Lefebvre, 1992). According to Thong et al (1997), top management support is based on five factors which include frequency of attendance of computerization project, involvement in information requirement analysis, decision making relating to the computerization project, reviewing consultant's recommendation and level of monitoring the project. Caldeira and Ward(2003) found that the positive attitude of top management has resulted in relative success of IS/IT adoption in SMEs .A number of studies have revealed that in SMEs, the role of top management is key to the enterprise, since their decision influences all firms' activities, both currently and in the future(Fuller-Love ,2006; Smith,2007). Use of ICT offers practical benefits for general management and also helps firms to overcome disadvantages of space and place (Irvine & Anderson, 2008).

The top manager's level of IT knowledge, accompanied by a favorable attitude towards IT, increases the level of IT investment (Harrigan *et al,* 2010).Management support in terms of adoption of ICT is the extent to which the management of an organization believes to be committed to successful use and implementation of a system (Gono *et al,* 2013). This therefore calls for management support in order to have a successful implementation of ICT project.Elbeltagi et al (2013) identifies in their study that ICT adoption and implementation

are based on manager's innovativeness, active participation, experience and knowledge of ICT plays a significant role. Therefore, the manager must own a sensible working knowledge on the new technology.

This in turn provides the necessary environment for adoption of ICT and by extension, better performance. Management support is therefore critical in ensuring successful adoption of ICT-marketing.

2.3.5 Information and Communication Technology Services and Performance

According to Bon (2011) IT Services Management is the management of all processes that cooperate to ensure the quality of live IT services, according to the levels of service agreed with the customer. Initiation, design, organization, management, provision, support and improvement of IT services tailored to the needs of organization are addressed. Important prerequisite for ICT service management is a comprehensive framework that enables the design and implementation of a service catalogue based on consistent service definition and categorization. The adoption of ICT services is a departure from technology-based products to commercial-based products which employs new applications of ICT.The development of niche products like e-marketing for example facilitates information sharing and at same time minimizes data storage costs.Apulu *et al*. (2013) reveals that the overall, maintenance, and training cost are some of the issues for non-adopters and there is reluctant upgrading of their systems and other sophisticated ICT service applications due to fear of high cost of adoption

2.3.6 Government ICT Policy.

According to Innis (1991), policy forms foundation for decision making, it offers important guidelines, clearly demarcating the boundaries that must be adhered to while making decisions. Khan (2006) adds that ICT policies are developed and adapted by nations to help guide the adaptation and sustainability of ICT within the sphere of influence. Zwan (2007)

argues that ICT policies are proactive approach that ensures organizations systems remain compatible therefore avoiding downtime and outages.

According to Stehr (2000) policy making and requlation of ICT in developing countries is complex and a difficult challenge,the reality of poverty causes organizations to accept pirated software which might not be compatible with their software .In his study,Tumuti(2011) found that most CBOs in Thika district did update their software and were not aware about the ICT policy.Only 45 percent did update their software.A Good policy ensures a level playing ground and ensures the right environment is created which in turns creates competition. According to Kozma (2005), competition helps lower the costs of ICT products and services, which fosters diffusion and also puts pressures on organizations to better their performance and change conservative attitudes (Kozma, 2005).

According to (Kiveu, 2013) factors such as regulations, prices, national policies on taxes ,labour and trade are some of the government interventions that hinder most of SMEs in adoption of ICT. These inflexible government policies, unstable tax policies and inappropriate inspection procedures, issues in regulatory of ICT infrastructure and services sometimes conducted by government authorities create discomfort and discourage growth of ICT adoption by this SME's (Raravi *et al,* 2014).The Kenyan national ICT policy released in 2006 seeks to make Kenya a posperous society by ensuring there is available ICT service wich is delivered efficiently,reliably and affordably (Nderitu,2011). Access to ICT services is limited to a few major towns leaving out the rural areas of the country where most Kenyans

live. There is therefore need to enhance universal access through creating incentives for service providers to deploy services in rural and under-served areas, creating awareness of benefits of ICT to the public and developing knowledge-sharing networks at grassroots level(National ICT Policy,2006).

2.4 Summary of Literature Review and Research Gaps

Tumuti (2011) conducted a study on factors influencing ICT adoption by CBOs and which focused on Training, associated cost, perception and attitude and government policy. Tumuti further observed that perception and attitude ranked highest in terms of adoption of ICT at 57.1 percent while training, associated costs and ICT policy ranked second, third and fourth in that order. Another related survey was carried out by Kiboye (2015) to determine the influence of ICT adoption on the operation of CBOs in Rangwe sub county, Kenya. The researcher focused on training in ICT, electronic platforms, and perception of members on ICT on the operations of the CBOs.Kiboye observed that ICT equipment has great impact on operation of any new organization and that the right equipment is required to increase efficiency. Kiboye further observed that most respondents had enough time for training. On the issue of the extent to which adoption of various ICT platforms influence operations of CBO, she noted that the ability to access and use various ICT platforms such as social media, computer gadgets and entertainment have an Influence on the operation of CBO members.Nyamu (2015) in her study focused on the factors influencing sustainability of CBOs in Kitui County. Nyamu investigated effects of governance, resource mobilization;

CBO formation process as well as internal management on the sustainability of the CBOs. CBOs are affected by political interference while funding influences the way the CBOs are run (Nyamu, 2015). The level of management knowledge and skills impacts the mobilization of resources for projects.

There has been little research on the impact of ICT on the CBOs particularly in rural areas. Most studies have concentrated on why ICT projects fail but then the focus is on big organizations (Standish, 2005) and not on CBO's especially in developing countries. The closest analysis of ICT impact on CBOs occurs in telecentre literature (Sey& Fellows, 2009).The study by Tumuti (2011) focused on factors influencing ICT adoption and which focused on Training, associated cost, perception and attitude and government policy. The study by Kiboye (2015) focused on the influence of ICT adoption on the operation of CBOs in Rangwe sub county.Nyamu (2015) on the other hand investigated the factors influencing sustainability of CBO projects in Kitui County, Kenya and ICT adoption was not included. It is for these reasons that a study is necessary to investigate ICT adoption and performance of CBOs, especially in developing and middle income countries.

2.5 Conceptual Framework

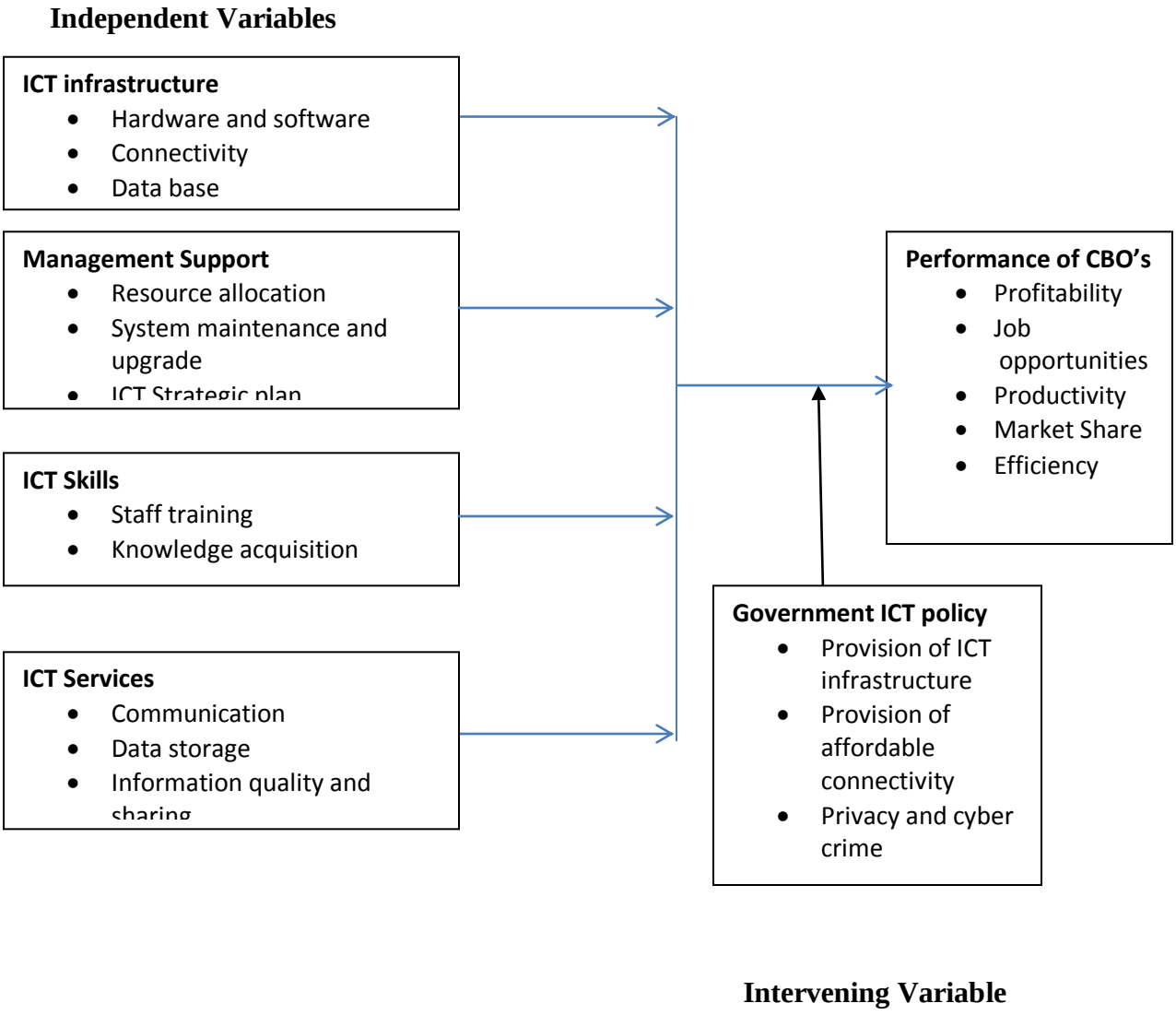

Figure 2.4 Conceptual Frame work

Source: Researcher (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter looks at the research methods that were used in the study. The chapter covers the research design adopted, population of study, sample size and sampling technique used, data collection instrument, Validity and reliability of the data collection instrument and data analysis procedures.

3.2 Research Design

The study adopted descriptive research design. A descriptive study design is used to obtain an in-depth investigation of an individual, institution or phenomenon (Mugenda and Mugenda, 2003).Further, Robson (2002) says that descriptive study describes an accurate profile of persons, events or situation and hence the reason why the design was most the most appropriate.

3.3 Target Population

The researcher targeted 168 CBOs who are registered in Kitui County (County Government of Kitui, 2014) and each CBO was represented by its manager as the respondent. The managers were deliberately chosen as they have a clear understanding of the operations of the CBOs.

3.4 Sampling Design and Size

Sampling technique provides a range of methods which enables reduction of data to be collected, by focusing on data from a sub-group rather than all cases of elements (Mugenda & Mugenda, 2003).

As recommended by Mugenda and Mugenda (1999), 50 percent of the total population of the registered 168 CBOs was used to determine the number of CBOs to participate in the research. Stratified random sampling was used to select the sample size of the study in which the Community Based Organizations population was grouped into stratus based on Health, water sanitation, environmental conservation and food sustainability. The study took 50 percent from each stratum to give a sample size of 85 Community Based Organizations from where one respondent per Community Based Organizations was chosen as shown in Table 3.1.A respondent (manager of the CBO) from each of the 85 CBOs chosen was given the questionnaire to fill.

Table 3.1 Sample Size

SN	CBO sector	Population	Sample size(50 percent of population)
1	Environment	27	14
2	Health	20	10
3	Water and Sanitation	28	14
4	Youth based	36	18
5	Food Sustainability	39	20
6	Education	18	9
	Total	**168**	**85**

Source: Researcher (2016)

3.5 Data Collection Tools and Instrument

Primary data was obtained from the respondents through structured questionnaires which comprised of closed and open questions. Dornyei and Taguchi (2009) states that a "questionnaire is a popular method of collecting data because researchers can gather information fairly easily and the questionnaire responses and easily coded". Further, according to Mugenda and Mugenda (2003), a self-administered questionnaire is the only way to elicit self-report on people's opinion, attitudes, beliefs and values. Quantitative data was obtained through closed ended questions while qualitative data was obtained through the open-ended questions. Close ended questions are easier to analyze since they are in an immediate usable form and are also easy to administer because each item is followed by choices from where the respondents can choose from**.**

3.6 Data Collection Procedure

According to Kothari (2008), Data collection is defined as the methodology and the instruments that a researcher uses to collect data. An introductory letter, validated by Kenyatta University was used to introduce the researcher to the respondents. The questionnaire was given to the respondents to fill and in the event they are not able to fill at that moment, drop and pick later method was adopted. A deadline for collecting the filled questionnaire was given to the respondents.

3.7 Validity of Instrument

Validity is the extent to which the measurement instrument is able to measure on what it says it measures and the more the valid the instrument is, the less the systematic error(Burns & Grove, 2007) . For a data collection instrument to be considered valid, the content selected and included must be relevant to the need or gap established (Saunders *et. al*., 2003). The construct validity is considered as a theory dependent and the estimate of the extent to which the measured variance reflects the variance of the underlying construct (Westen *et al.*, 2003). To evaluate the validity of the questionnaire as data collecting instrument, a pilot test was conducted. The researcher administered the instruments on specific objective addressed and assessment made to ascertain clarity, accuracy, relevance and suitability of the instrument. Mugenda & Mugenda (2003) describe the validity in quantitative research as "construct validity". The construct is the initial concept, notion, question or hypothesis that determines

which data is to be gathered and how it is to be gathered. There are two types of validity which were addressed and stated, face validity with pre-testing of survey instruments and content validity which involved the use of expert opinions, literature searches, and pretest questions

A pilot study was done to pretest the research instrument used in order to offer an advanced warning regarding any weaknesses of the study. According to Simon (2011) this is necessary as it used to try out research instrument in preparedness of the major study to be undertaken. This was achieved by issuing 10 questionnaires randomly to managers and assistant mangers of the CBOs to fill and return back. Enhancement and improvement was made to the instrument to guarantee quality and accuracy

3.8 Reliability of Instrument

Mugenda and Mugenda (2003) defined reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. The reliability of the research was achieved by administering the instrument with well-trained data collectors who understood the specific objective of the study and who were able to distribute and help the respondent understand the instrument **.**Reliability of the questionnaire was determined by use of Statistical Package for Social Sciences (SPSS) by conducting reliability analysis where the item's internal consistency were determined using Cronbach's alpha (α) coefficient.As

indicated in Table 3.2, if the Cronbach's alpha is greater than 0.7, then the reliability of the questionnaire will be acceptable.

Table 3.2 Interpretation of Cronbach's alpha

Cronbach's alpha	**Internal consistency**
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	unacceptable

Source: Adopted from Cronbach (2004).

According to George and Mallery (2003) the formula = rk / [1 + (k -1) r] where the k=number of items r=mean of inter item correlations is used to find the size of alpha

The internal consistency outlines the extent of which all the items in a test measure similar concept or construct (Tavakol & Dennick, 2011).

A pre-test helped the researcher identify the most likely source of errors and after which the questionnaire was modified before the actual study.

3.9 Data Analysis and Presentation

Questionnaires underwent wholeness and consistency check before processing .Cleaning and then the verification of the data was done. Initial frequency tables were run to authenticate the data. The data collected by the questionnaire was edited, coded, entered into Statistical

Package for Social Sciences (SPSS) which aided the data analysis. The study generated qualitative and quantitative data. Quantitative data was analyzed using descriptive and inferential statistics. The qualitative data was generated from the open ended questions and was categorized in themes in line with research objectives and reported in narrative form along with quantitative presentation. Content analysis was used to analyze the qualitative data. Researchers regard content analysis as a flexible method for analyzing text data (Cavanagh, 1997).

Descriptive statistics included frequency distribution tables and the mean, measures of standard deviation and measures of relative frequencies. The inferential statistics included a multiple regression model which was used to establish the relationship between variables. The multiple linear regression equation is

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y = Performance of CBO,

X_1= ICT Infrastructure,

X_2= ICT management support

X_3= ICT Skills

X_4= ICT Services,

β_0 is constant term, while β_1, β_2, β_3 and β_4 are the beta coefficient of regression and ε is the error term.

3.10 Ethical Consideration

A letter to authorise the research to be done was obtained from Kenyatta University. The aim of the study was explained to each respondent and assurance given to them that the information will be treated in confidence. Only the participants who agreed to participate were allowed to take part in the exercise. Coverage of the protections and rights of the participants during and after the exercise were clearly explained to them. These included confidentiality, participant's anonymity, researcher contact details, voluntary involvement, and freedom of expression to allow favorable environment for more quality and reliable information obtained.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter covers the analysis of the data collected, the findings and discussions of the study. This involved analysis of response rate, reliability analysis, descriptive analysis of the demographic information and all the variables involved.

4.2 Response rate

Table 4.1 Response Rate

	Target	**actual**	
	Frequency	frequency	Percentage of response
CBO's	85	70	82.35

Source: Survey data (2016)

The questionnaires returned were 70 against 85 given out thus the return rate was 82 percent as shown in Table 4.1 .According to Mugenda and Mugenda (1999), a response rate of 50 percent is sufficient for analyzing and reporting while a response rate of 60 percent is good and that of 70 percent is very good. Thus the return rate of this survey was deemed sufficient for this study.

4.3 Reliability Analysis

The reliability of the scale was determined by conducting reliability analysis where the items internal consistency was measured using Cronbach's alpha (α) coefficient. As shown in Table 4.2 the alpha coefficient was found to be greater than 0.7 for all items under consideration, suggesting the items had high level of internal consistency. A reliability coefficient of .70 or higher is considered acceptable (George & Mallery, 2003).Table 4.3 shows the overall Cronbach alpha was 0.918 which is over and above the acceptable value

Table 4.2 Reliability Statistics

	Remarks	**Cronbach's Alpha**
ICT infrastructure	0.719	Accepted
Management support	0.782	Accepted
ICT Skills	0.783	Accepted
Government ICT Policy	0.736	Accepted

Source: Survey data (2016)

Table 4.3 Overall Cronbach alpha

Cronbach's Alpha	**N of items**
0.918	21

Source: Survey data (2016)

4.4 Demographic information

4.4.1 CBO Field of specialization

The study was carried out on CBOs specializing in the fields of Health, Environment and conservation, Water and Sanitation, Youth based activities, food sustainability and Education. Table 4.4 shows the number of CBOs studied and their area of specialization

Table 4.4 CBOs studied

CBO Sector	**Frequency**	**Percentage**
Health	6	8.6
Environmental Conservation	11	15.7
Water and Sanitation	13	18.6
Youth based	16	22.9
Food Sustainability	17	24.3
Education	7	10.0
Total	**70**	**100**

Source: Survey Data (2016)

4.4.2 Distribution of Respondents by Gender

The response by gender as shown in Figure 4.1 was 56 percent for males and 44 percent by females. This shows males were slightly more involved in leadership positions of the CBOs

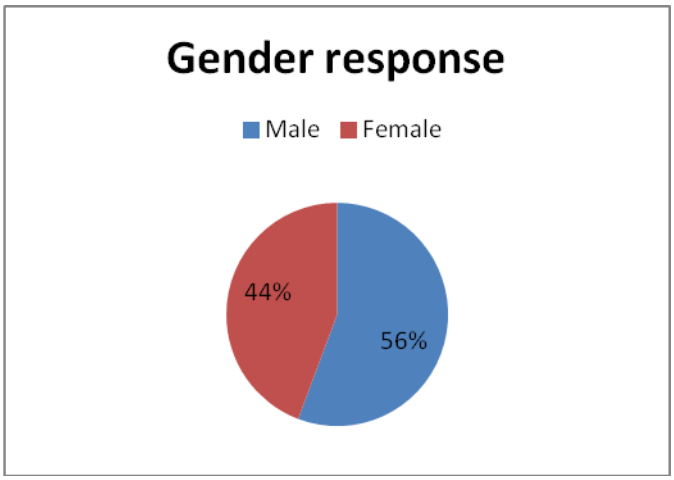

Figure 4.1 Gender response

Source: Survey data (2016).

4.4 .3 Age of Respondents

The ages as shown in Table 4.5 indicates that most of the managers of the CBOs were aged between 41 and 50 years. This group represented 41.4 percent while those aged over 50 years at 17.1 percent were the minority. Those in the age bracket 31-40 years contributed 21.4 percent while those below 30 years contributed 20 percent.The findings show that the majority of the respondents were in the 41-50 age bracket, meaning the youth were yet to take up leadership positions in the running of the CBOs.

Table 4.5 Ages of Respondents

Age Bracket	Frequency	Percentage
Below 30 years	14	20.0
31-40 years	15	21.4
41-50 years	29	41.4
Above 50 years	12	17.1
Total	70	100

Source: Survey Data (2016)

4.4.4 Level of Education of the Respondents

Figure 4.2 shows that those with Bachelor's degree were the minority at 10 percent while those with primary or secondary education were the highest at 57.1 percent. Those with certificate or diploma were 23 percent. The findings show that the managers of the CBOs have a fair level of level of education.

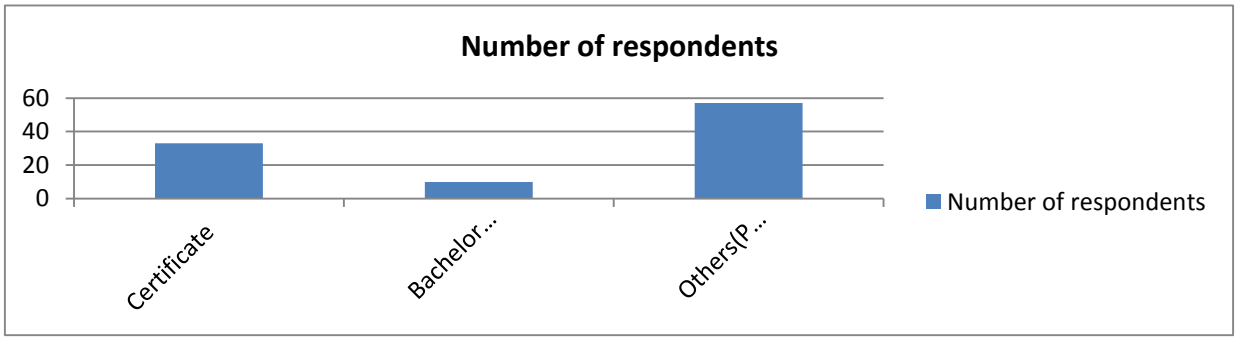

Figure 4.2 Level of Education

Source: Survey Data (2016)

4.4.5 Work experience

This section describes the work experience of the respondents. The respondents who had worked for less than 5 years contributed 34.3 percent while those that had worked for more than 20 years and between 1 to 20 years contributed 11.4 percent each as shown in Table 4.6. Those who had worked for 11 and 15 years were 10 percent .It therefore means those who worked for more than 5 years were 76 percent and therefore were able to give satisfactory answers regarding the adoption of ICT and performance of the CBOs.

Table 4.6 Work Experience

	Frequency	**Percent**
Less than 5 years	24	34.3
5-10 years	23	32.9
11-15 years	7	10.0
16-20 years	8	11.4

Source: Survey Data (2016).

4.5 ICT Infrastructure and Performance

This section describes the communication infrastructure deployed by the CBOs.In terms of connectivity, overwhelming majority at 85.7 percent indicated they were using mobile as media of connectivity. Fibre, Radio and fixed line contributed dismally at 8.6 percent 12.9 percent and 1 percent respectively as illustrated in Table 4.7. This is explained by the fact that mobile penetration is higher while other media are either too expensive or not available.

Table 4.7 Connectivity infrastructure

	Frequency	Percent
Fibre Connectivity	6	8.6
Fixed line connectivity	3	4.3
Radio connectivity	1	1.4
Mobile connectivity	60	85.7
Total	**70**	**100**

Source: Survey Data (2016)

4.5.1 Quality of connection

Most respondents agreed the speeds were good at 59 percent while 20 percent indicated the speeds were fast. Those who felt the speeds were slow were 21 percent as per figure 4.3.It therefore shows majority were satisfied with the connection speeds. The speed of internet service not only impacts how quickly employees access their email or finds important information—it affects the quality of customers' experience. In fact, enhancing the customer experience is a major driver of satisfaction and loyalty—both of which are vital to your bottom line. From marketing business, providing good customer service, to operating

business, internet speed can highly affect business. Today, speed or data rate is the single most important technical metric for characterizing broadband service with faster speed equating to better performance ,holding other characteristics like price constant(Bauer&Clark,2010)

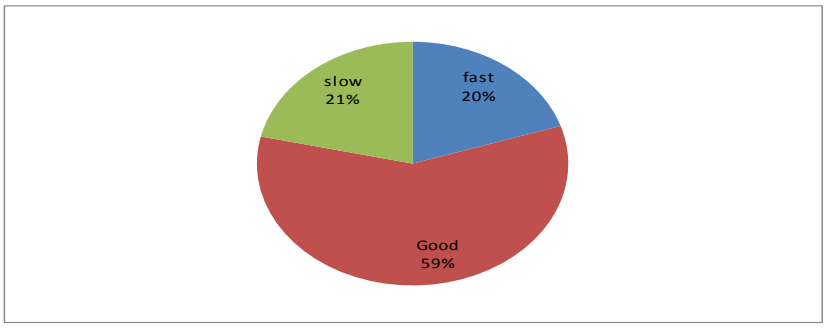

Figure 4.3 Connection Speeds

Source: Survey Data (2016)

The CBO's agreed that the performance is greatly impacted by ICT use with 97 percent of the respondents indicating efficiency had improved while customer service had improved for 87 percent of the CBOs.This is a clear indication of the great impact the use of ICT has on performance.

The CBO's generally did not have sufficient computer hardware resource with 22.9 percent of respondents disagreeing strongly and 18.6 percent disagreeing and mean of 2.86. Only 20 percent of respondents agreed that the CBO's had enough resources while 17.1 percent strongly agreed they had sufficient computer resources. Feeny and Willcocks (1998) argue that IT resources influence business strategies, and that business strategies have an influence

on IT resources. Inadequate IT resources therefore affects performance of the CBO's negatively. Anand,Wamba and Sharma(2013) in their study avers that firm's IT capabilities exert a direct effect on performance improvements at the organizational level as well as an indirect effect mediated through performance improvements at the process level

Asked how else ICT infrastructure had influenced performance of CBO, the respondents indicated ICT infrastructure had played a key role in communications between themselves and their donors with 42.9 percent agreeing with this view as well as in mobilization of members. The respondents also indicated ICT Infrastructure had facilitated the use of mobile money transfers to transfer funds as well .This view was supported by 20 percent of the respondents. The respondents were asked how else the ICT infrastructure had influenced the performance of the CBO's and majority at 42.9 percent indicated that it had helped in enhancing communication between different stake holders as well as in mobilization of members. This supports a study by (Kiboye, 2015) in which she states that access and use of various ICT platforms such as media, computer gadgets and entertainment has an influence on operations of CBO.According to the survey, 20 percent of respondents indicated ICT infrastructure had helped in facilitating payments. This is normally done through mobile money transfer and mobile banking.

Table 4.8 ICT Infrastructure

Statement	SD (%)	D (%)	U%	A (%)	SA (%)	Mean	stdev
Our organization has sufficient computer hardware resources	22.9	18.6	20	20	17.1	2.86	1.457
Our organization has adequate telephones.	18.6	35.7	21.4	15.7	8.6	2.6	1.209
Our organization has reliable and fast internet	11.4	15.7	44.3	25.7	2.9	2.93	0.997
Our organization supports future system upgrade	15.7	10	35.7	3	4.3	2.9	1.218
Existing infrastructure enhances efficient running ICT solutions and service delivery	10	10	3**1**.4	31.4	17.1	3.36	1.18

Key: **5**-Strongly Agree(SA), 4-Agree(A),3-Undecided(U),2-Disagree(D),1-Strongly Disagree(SD)

Source: Survey data (2016)

4.6 ICT Management Support and Performance

According to Table 4.9 majority of the respondent at 37.1 percent agreed that the management facilitates the organization to undertake system monitoring and at regular periods to avoid breakdowns, with 27.1 percent strongly agreeing. Only 11.4 percent strongly disagreed that the management did not support the organization in that regard while a similar number disagreed. The respondents strongly agreed at 42.9 percent that the management had invested and continued to invest in ICT facilities while 27.1 percent strongly agreed with this view. According to the survey, 8.6 percent of the respondents strongly disagreed that the management while 14.3 percent disagreed .This is in line by (Tumuti, 2011) whose study

found out that 44 percent of respondents agreed that CBOs management was committed to ICT. Further, ICT investment have capacity to positively impact the performance of firms in various ways which include cost reduction (Phojola, 2001), innovation enhancement (Koellinger, 2005), productivity (van Ark, 2002; Pilat, 2005), competitive advantage (Papp, 2001). According to the survey, the respondents 37 percent agreed that the management supports training on new and emerging technologies while a considerable number of the respondents at 25.7 percent were undecided. This supports the study by Tumuti (2011) in which he states that CBOs management in Thika provide time and computing resources to their employees

Table 4.9 ICT Management Support

Statement	**SD (%)**	**D (%)**	**U (%)**	**A (%)**	**SA (%)**	**Mean**	**Std Dev**
Management facilitates organization to undertake system monitoring at regular periods to avoid breakdowns	11.4	11.4	11.4	37.1	27.1	3.53	1.38
Management has invested and continues to invest in ICT facilities	8.6	14.3	7.1	42.9	25.7	3.59	1.32
Management facilitates staff on training of new and emerging technologies related to ICT	8.6	18.6	25.7	37.1	10	3.21	1.12
Management supports staff by attending project meetings	17.1	8.6	28.6	27.1	18.6	3.21	1.33

Key: 5-Strongly Agree(SA), 4-Agree(A),3-Undecided(U),2-Disagree(D),1-Strongly Disagree(SD),Undecided(U)

Source: Survey Data (2016)

4.7 ICT Skills and Performance

According to table 4.10, 40 percent of respondents indicated staff had requisite knowledge on how to use ICT facilities while a significant number at 11.4 percent disagreed. The respondents at 10 percent strongly disagreed with this view. According to the survey, 44.3 percent agreed that the staffs are able to access the internet to search for information. Only 10 percent disagreed with 5.7 percent strongly disagreeing. The majority therefore have knowledge on how to use the computing facilities and this makes use of the ICT easy. The respondents at 45 percent agreed that the organizations offer training whenever there is software or hardware up grade. Paolo and Seri (2012) avers that ICT skills affect performance of Public sectors and further argues that ability to improve quality of labour force and handle organizational challenges is a distinctive factor affecting performance of Public and Administrations.

Further, a similar study by Forth and Mason (2006) on whether ICT Skills hamper firm's performance concludes that ICT skill shortages have a clear indirect negative impact upon company performance.

The respondents were asked how else the ICT skills had influenced their performance and 17.1 percent indicated it improved efficiency while 14.3 percent said it provided them with platform for sourcing for funds. When asked how else the ICT skills had helped the performance,17.1 percent of respondents indicated that it had improved efficiency while 14.3 percent indicated it facilitated them to access donor funding .This supports a study by

Forth and Mason(2004) which avers that there is significant relationship between severity of ICT skills gaps and company sales performance. Better and cheaper record management was rated by 11.4 percent of respondents with a similar number saying it had facilitated them access markets.

Table 4.10 ICT skills

Statement on ICT skills	**SD %**	**D %**	**U %**	**A %**	**SA %**	**Mean**	**Std Dev**
Staff have requisite knowledge to use ICT resources in the organization	10	11.4	20	40	17.1	3.39	1.266
Staff are able to access internet to search for information through mobile or other connections	5.7	10	21.4	44.3	18.6	3.6	1.082
The organization offers training to the staff whenever there is software or hardware upgrade	17.1	8.6	17.1	45.7	11.4	3.26	1.282
There is induction of new staff on use of ICT resources	12.9	11.4	10	45.7	15.7	3.27	1.434

KEY:5-Strongly Agree(SA), 4-Agree(A),3-Undecided(U),2-Disagree(D),1-Strongly Disagree(SD)

Source: Survey data (2016)

4. 8 ICT Services and Performance

As table 4.11 shows, 40 per cent of respondents agreed the security and storage of data was adequate while 17.1 percent disagreed with 11.4 percent strongly disagreeing. Security of data was therefore deemed adequate. Data security is important as it ensures privacy for sensitive customer information is guaranteed while at same time safeguarding organizational

data. This means no litigations can be made against the organizations thereby eating into the organizations profits due to breach of privacy while at same time organizational data cannot be stolen by the competition thereby undermining its activities and these taken together improves the performance of the CBOs. According to Bhansali (2003) the dynamic nature of data security threats makes a strong for case corporate data governance in which monitoring, evaluating and assessing data, its uses and database activity to better understand and control data risk to ensure data is being used for the maximum benefit of all stakeholders. On the question whether there was adequate sharing of information, 28.6 percent agreed while 21.4 percent disagreed with 15.7 percent of them strongly disagreeing. This means a greater number of the respondents felt information sharing was sufficient which in turn affected the performance of the CBOs.Information sharing within improves efficiency as people are able to share new ideas, new markets and better ways of doing things. Sharing information enables organizations to market their products and generally inform their customers about new products. Lee and Whang (2000) describe information sharing as an enabler for tight coordination among trading partners. This is further corroborated by Sawaya (2006) who concludes that information is very crucial for improved coordination across organizational boundaries and increased understanding of the factors which effect information sharing and the crucial question of the impact of sharing information are important to those who seeking to affect free flow of information between organizations.

Majority of the respondent's undecided on whether there was sufficient communications systems closely followed by those who agreed that there was sufficient communications systems. According Bidgoli (2004), ICT systems allows users to generate, disseminate, analyse and store vast amounts of information quickly thereby increasing efficiency, productivity and performance of organizations. Use of Communications systems ensures that there are fewer customer complaints more communication between customers and suppliers while increasing customer loyalty.

According to the survey, 41.4 percent were undecided on whether the training was cost effective enforcement while 30 percent disagreed that the communication systems were adequate and this is in line with Kiboye (2015) who study in Rangwe sub county, Kenya indicated 49.6 percent disagreed that cost of accessing ICT is affordable.

Table 4.11 ICT services

Statement	SD %	D%	U %	A %	SA %	Mean	Std Dev
There is adequate security and sufficient storage of data	11.4	17.1	28.6	40	2.9	3.06	1.075
Sharing of information is sufficient	17.1	21.4	21.4	28.6	11.4	2.96	1.290
Training of ICT use is a cost effective	8.6	30	41.4	12.9	5.7	2.73	1.034
Communication systems in the organization is sufficient	15.7	30	35.7	8.6	7.11	2.53	1.164

KEY:5-Strongly Agree(SA), 4-Agree(A),3-Undecided(U),2-Disagree(D),1-Strongly Disagree(SD)

Source: Survey data (2016)

4.9 ICT Government policy and Performance

Majority of the respondents acknowledged that they were aware about the existence of the Government ICT Policy at 76 percent as shown in Figure 4.4, more so on proper use of communication devises in as far as propriety is concerned. A smaller number at 14 percent indicated they were not aware about the existence of the Government policy on ICT while 10 percent didn't respond on this issue. The main role of the National ICT Policy is to improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services (National ICT Policy, 2006).

4.9.1 Internet Affordability

In terms of affordability of internet and others forms of connectivity, 40 percent of respondents indicated the rates are affordable with 33 percent and 21 percent indicating that it was costly and very costly respectively.The new technologically advanced distribution channels permit anyone to receive the most up -to date multimedia information on the best connections, and at the best prices (Keller, 1996).The cost of accessing the infrastructures influences the growth of E-commerce (Molla, 2005).The Kenya National ICT Policy seeks to ensure affordability and access to ICT nationally (National ICT Policy, 2006).The internet affordability is correlated with performance as espoused by the National ICT Policy

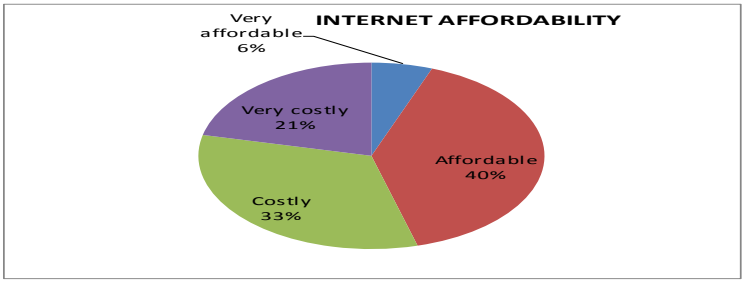

Figure 4.4 Internet Affordability

Source: Survey data (2016)

4.9.2 Local Content

Generally, the respondents felt development of local content in media would improve performance of the CBOs with 25.7 percent and 15.7 percent rating that it would improve to a great extent and very great extent respectively according to Figure 4.5 .This is in line with the fact that Kitui County is predominantly rural where majority speak in one dialect. The percentage of residents in Kitui County residing in rural areas is 86.2 percent (Kenya National bureau of statistics, 2010) ICT is a conveyor of information, providing opportunities for local people to interact with each other expressing their own ideas, knowledge, heritage and culture in their own languages. Improving local content will entail developing content in local languages (National ICT Policy, 2006). Substantial studies have been carried out on human capital and their implications on firm's performance on widely basis and the results showed that human capital enhancement results in greater firm's competitiveness and industrial performance (Barney, 1995).

Local Content Policy has actually stimulated human capital development and linkages between the oil and gas sector and other sectors of the Nigerian economy, which have resulted in enhanced capabilities in winning contract awards and increased profitability of the indigenous oil companies(Monday,2014).Development of local Content can lead to improved performance by CBOs as shown in the study.

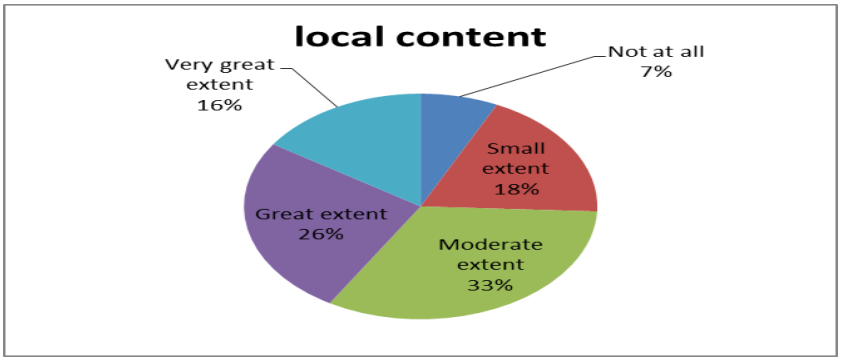

Figure 4.5 Local Content

Source: Survey Data (2016)

4.10 CBO performance

According to the survey, 54 percent of those interview agreed that ICT in CBO had reduced operational costs and increased productivity while 12.9 percent disagreed with this view. 17.9 percent strongly agreed while 11.4 percent were undecided. According to Kapurubandara and Lawson (2006), it is obvious that organizations embrace ICT in order to survive and stay abreast in the present competitive global economy. Fink and Disterer (2006) also advocate that ICT offers many potential benefits to organizations so as to make them more efficient, effective and competitive. Market share had increased as indicated by 51.4 percent of the respondents as a result of adopting ICT while only 4.3 percent disagreed with this view. The implementation and effective use of ICT in organizations brings about competitive advantage (Apulu, 2011). Majority of the respondents agreed that ICT had made them increase their revenues. The positive impact of ICT on the global criteria, especially

Improved revenue corroborates the findings .Laudon (1991) who studied the entire cash flow of most fortune 500 companies and linked their success to Information System.

There was generally an improvement in efficiency across business processes with 34.3 percent agreeing with this view and 32.9 percent sternly agreeing with this view. The respondents were asked how else the adoption of ICT had affected or influenced the organizational performance and most respondents at 31.4 percent indicated that communication between staff while 18.9 percent said record keeping had improved. This is in line with a study by Kiboye (2015) who observed that CBOs used ICT to save on cost and to monitor finances. Nelson (2006) in his study supports this view by saying that ICT electronic platforms have enabled the connection of CBOs operations and management of finances among CBOs and NGOs, even those that had been marginalized. Existing empirical studies, point to a positive link between economic performance at the firm and macroeconomic level and increased adoption and use of ICTs (OECD, 2012).

Table 4.12 CBO Performance

Statement on ICT performance	SD %	D %	U (%)	A%	SA %	Mean	Stddev
ICT in the organization reduced operational cost and increased productivity	5.7	12.9	11.4	54.3	25.7	3.61	1.081
ICT Increased Market share	4.3	11.4	11.4	51.4	21.4	3.74	1.059
Increased revenue thus alleviating poverty	4.3	12.9	21.4	48.6	12.9	3.53	1.018
Improved efficiency across business processes	8.6	8.6	15.7	34.3	32.9	3.74	1.247

KEY:5-Strongly Agree(SA), 4-Agree(A),3-Undecided(U),2-Disagree(D),1-Strongly Disagree(SD)

Source: Survey Data (2016)

4.12 REGRESSION COEFFICIENT

The researcher determined that performance can be predicted based on ICT infrastructure, Management support, ICT skills and ICT policy. Regression was also used to find out what each of the mentioned predictors contributed to the total variance .As per table 4.13, equation $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ was used and yielded the following,

$Y = 1.478 + 0.321X_1 - 0.073X_2 + .190X_3 + 3.88X_4 + \varepsilon$

Where Y = Performance of CBO,

X1= ICT Infrastructure,

X2=ICT Skills,

X3= Management Support,

X4= ICT services,

β_0 is constant term, while β_1, β_2, β_3 and β_4 are the beta coefficient of regression and ε is the error term.

According to the regression equation above and taking all factors into consideration (ICT infrastructure, ICT Skills, Management support and ICT Services) and constant at zero,CBO performance will be 1.478.The data analyzed shows that when all independent variables are at zero, a unit increase in ICT infrastructure will lead to an increase of 0.321 in CBO performance ,a unit increase in management support will cause an increase in 0.190 in CBO performance ,an increase in unit for ICT skills will lead to a decrease of 0.073 in CBO performance while an increase in ICT services will lead to an increase in 3.88 in CBO performance when all independent values are at zero.

At 95 percent level of confidence, Management support had 0.002 level of confidence; ICT infrastructure had 0.044,ICT services had 0.000 meaning they were significant because their p-values were all less than 0.05.The value for ICT skills was 0.334 which is larger than 0.05 and was therefore insignificant.

Table 4.13 Regression Coefficient

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.478	2.048		.722	.473
	Management support	.321	.102	.394	3.155	.002
	ICT Services	.388	.079	.485	4.883	.000
	ICT Skills	-.073	.075	-.121	-.974	.334
	ICT Infrastructure	.190	.061	.147	1.467	0.044

a. Dependent Variable: Performance

Source: Survey Data (2016)

4.13 Model Summary

Adjusted R^2 is .31 meaning 31 percent of total variance has been ‘’explained’’.When aggregate mean scores of performance were regressed against ICT Infrastructure, ICT Services, Management Support and ICT Skills the results produced an adjusted R^2 of 0.31as shown in Table 4.14. Thus, 31 percent of the variation in Performance scores is explained by ICT Infrastructure, ICT Services, Management Support and ICT Skills.

Table 4.14 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592[a]	.350	.310	1.60882

Predictors: (Constant), ICT Infrastructure, ICT Services, ICT Management Support, ICT Skills

Source: Survey Data (2016)

4.14 AN0VA

According to table 4.15, there were four predictors, that is, ICT infrastructure, Management Support, ICT skills and ICT Services while the dependent variable was Performance. F critical at 5% was 2.588 .The F calculated is more than the F critical with a value of 8.747 indicating the significance of the overall model. The P value was 0.000 which is less than 0.05 and this is an indication that there was a statistically significant difference between the group means. The p value <0.001 is significant (less than p=0.05), the variable predictor (ICT Services, ICT skills, ICT management support, ICT infrastructure) explained the dependent variable variation in CBO performance. But in case F significance value was more than 0.05 it could have not indicated dependent variable variation by the independent variables.

Table 4.15 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	90.559	4	22.640	8.747	.000[b]
	Residual	168.241	65	2.588		
	Total	258.800	69			

a. Dependent Variable: Performance

b. Predictors :(Constant), ICT Infrastructure, ICT Services, Management Support, ICT Skills.

Source: Survey data (2016)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMEDATIONS

5.1 Introduction

The chapter covers the summary of the findings, conclusions; recommendations arrived at, suggestions for related studies that could be done in future.

5.2 Summary of Findings

The purpose of the study was to determine how Information and Communication Technology adoption influences the performance of CBOs in Kitui County. The various studies that have been done have not shown how adoption of ICT influences the performance of CBOs despite the wide use of ICT by organizations and resultant benefits. The study was carried among 85 managers of 85 CBOs based in Kitui County. The study adopted descriptive research design and primary data used was obtained from respondents through structured questionnaires which comprised of closed and open-ended questions. The questionnaires were to the respondents to fill and in the event they were not able to fill at that moment, drop and pick later method. Face validity with pre-testing of survey instruments and content validity which involved the use of expert opinions and literature searches was used to determine the validity of the instrument. The data collected by the questionnaire was edited, coded and entered into the Statistical Package for Social Sciences (SPSS) which aided in analyzing the data.

Quantitative data was analyzed using descriptive and inferential statistics while qualitative data was analyzed using content analysis technique. Regression equation was used to establish the relationships between the variables.

5.2.1 ICT Infrastructure

The CBO's generally did not have sufficient computer hardware resources .Most respondents felt that ICT Infrastructure had helped them enhance communication amongst themselves and other stakeholders as well as in mobilizing members whenever there was need to do so. It was observed that communication with the donor community had improved greatly by use of Mobile Phones and emails. Respondents also felt ICT Infrastructure had made money transactions quicker and safer. The study revealed that most CBOs use mobile connectivity due to the high penetration level while just a few used fiber connectivity. The few CBOs who used fiber as media of connectivity where found at Kitui town. Copper as a media of connectivity was used by few CBOs at Kitui and Mwingi.The majority of CBOs indicated that connection speeds of their mobile were good. Majority of the respondents were of the view that existing infrastructure had enhanced efficient running of ICT solutions and service delivery, including improved customer service.

5.2.2 ICT Management Support

The study found out that the respective management of different CBO facilitated the CBOs to undertake system monitoring at regular periods in order to avoid system outages. The vast majority of the respondents agreed that the respective management of different CBOs had invested and continued to invest in ICT facilities. The study further revealed that different managements of various CBOs facilitated staff on training of new and emerging technologies. As a way of supporting the CBOs, the majority of the respondents indicated that the management team attended on regular basis ICT project meetings. Management Support was therefore crucial in improved performance of the CBOs

5.2.3 ICT Skills

The study revealed that majority of the staff had requisite knowledge on how to use ICT resources in the organization. Staff is able to access internet to search for information through mobile or other connections according to the majority of the respondents. The reason given by the majority on why they browse the internet was that they do so in search of donors to fund their activities. The study also found that CBOs offered training to the staff whenever there was software or hardware upgrade. Majority of the respondents indicated that there was induction of staff on how to use the ICT resources for new staff. When asked how the ICT Skills had influenced their performance, majority indicated ICT skills had improved efficiency. The respondents further indicate the ICT skills had helped them manage records more efficiently

5.2.4 ICT Services

Security and storage of data was adequate according to majority of the respondents with a small number of respondents disagreeing with this view. The study revealed that there was adequate sharing of information. Majority of the respondent's were undecided on whether there was sufficient communications systems closely followed by those who agreed that there was sufficient communications systems.

5.2.5 ICT Government Policy

Majority of the respondents acknowledged that they were aware about the existence of the Government ICT Policy, more so on proper use of communication devices; in as far as propriety is concerned. The respondents felt the internet was not affordable and generally, felt development of local content in media would improve performance of the CBOs. Kitui County has more residents residing in the rural areas than in urban areas and thus the majority speak the local dialect

5. 2.6 CBO Performance

The results from the study revealed that performance had increased in the sense that operational costs had reduced and the productivity had increased after adopting ICT. The majority of the CBOs had seen their market share increase due to the adoption of ICT indicated by Majority of the CBOs.Indeed the respondents agreed that the CBOs were more efficient ,effective and competitive after adopting ICT which in essence a sign of improved performance. The vast majority of the respondents felt the CBOs had increased their

revenues thus alleviating poverty. Donor funding was more accessible due to improved communication through emails, telephones and researching through the internet. This in turn had improved the performance due to additional funding. The study revealed that there was improved efficiency across business processes as a result of adopting ICT.The respondents for instance indicated the members were being mobilized more effectively and at reduced costs through emails and telephone calls.

5.3 Conclusions

The first objective was to find out the effect of ICT infrastructure on performance of CBOs in Kitui County, Kenya. The study concluded that ICT infrastructure greatly affected the performance of the CBOs by way of improved communications between different CBOs stakeholders, improved funding. The study further concluded that inadequate computing resources affected performance of the CBOs negatively performanceThe second objective was to establish the effect of ICT skills on performance of CBOs in Kitui County, Kenya.

The second objective was to establish the effect of ICT skills on performance of CBOs in Kitui County, Kenya .The survey concluded that there was strong correlation between ICT Skills and Performance. Through the use of the ICT infrastructure and being equipped with necessary ICT skills, the CBOs had improved their revenue collection as well as sourcing of donors.

The third objective was to assess the effect of ICT Management support on performance of CBOs in Kitui County, Kenya.The Study concluded that ICT management support influenced the performance of the CBOs.Through training of staff and provision of computing resources, performance was greatly enhanced.

The fourth objective was to assess the effect of ICT Services on performance of CBOs in Kitui County; Kenya. The study concluded that there was a correlation between performance and ICT services. Through adequate security and storage of data as well as efficient sharing of data, ICT services improved performance of the CBOs.

The fifth objective was to determine effect of Government ICT policy as an intervening variable on performance of CBOs in Kitui County, Kenya. The study concluded that Government ICT Policy was necessary in order to have affordable and reliable internet. The survey further concluded that there was need to develop local content. The study further concluded that affordable internet as well as local content affects performance of the CBOs.

In conclusion, performance is influenced greatly by adoption of ICT.Management support, ICT skills, ICT services and ICT infrastructure influence the performance of CBOs.

5.4 Recommendations

The CBO's generally did not have sufficient computer hardware resources. The national government should subsidize the costs of the computing devices meant for the CBOs by

waiving the taxes as most of the CBOs are not very sound financially; especially if they are in their formative stages. CBOs should allocate a budget to acquire hardware, software resources and communication systems resources' in order to be fully ICT compliant. The CBOs should use the ICT infrastructure to aggressively look for donor funding in order for them to improve on their performance.

Management of various CBOS should invest more in computing and human resources in order for the CBOs to improve their performance and take advantage of the from innumerable opportunities available as espoused by the study. Training on use of computing resources is key in ensuring the users are kept abreast of the ever changing technology and therefore management support is necessary in encouraging users and facilitating their training.The staff of the CBOs ought to be regularly undergoing training on ICT in order for them to improve their skills. The study revealed that majority of the staff had requisite knowledge on how to use ICT resources in the organization and it is imperative that new staffs are put through ICT induction training .The CBOs should encourage sharing of information as this will improve efficiency as well as cut costs. Security and storage of data should be enhanced by the management of various CBOs as a way of maintaining integrity of data and avoidance of litigations.

The Government should consider developing local content in order to disseminate relevant information to as many members of CBOs possible. This will help information reach even those that may have limitations in Kiswahili and English languages. The government in its ICT Policy describes affordable internet as one of the objectives. The government should therefore look for ways of ensuring that the internet is affordable

5.5 Suggested for Further Research

A similar study should be conducted to determine ways of improving rate of ICT adoption by CBOs in rural areas so that they can improve their performances. A comparative study should be carried between CBOs dealing with different sectors of the economy.

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APPENDICES

Appendix I: Introduction Letter

PETER MUEMA MUNYAO

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Dear Respondent,

RE: RESEARCH ON INFORMATION AND COMMUNICATION TECHNOLOGY ADOPTION AND PERFOMANCE OF COMMUNITY BASED ORGANIZATIONS IN KITUI COUNTY, KENYA

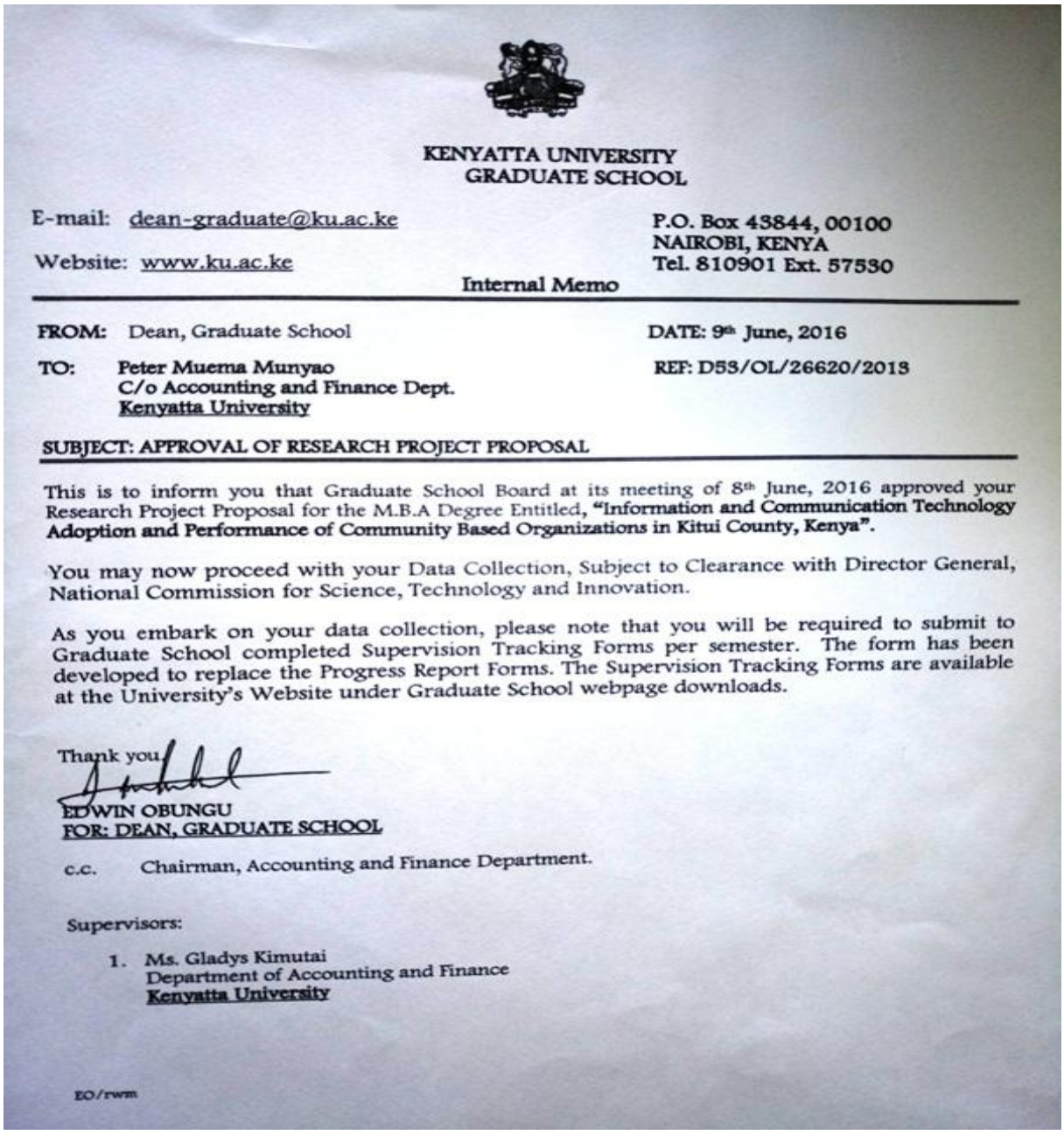
I am a final year Master of Business Administration student at Kenyatta University, specializing in Management Information Systems. I am required to carry out research on the above topic as partial fulfillment of the degree course.

I kindly request you to spare sometime from your busy schedule and fill in the questionnaire. All the information provided will be purely used for academic purposes and your identity will be treated with utmost confidentiality and therefore do not write your name anywhere on the questionnaire

Thank you for your cooperation.
Yours faithfully,

Peter M Munyao

Appendix ii: Approval letter from Graduate School



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 9th June, 2016

TO: Peter Muema Munyao
C/o Accounting and Finance Dept.
Kenyatta University

REF: D53/OL/26620/2013

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 8th June, 2016 approved your Research Project Proposal for the M.B.A Degree Entitled, **"Information and Communication Technology Adoption and Performance of Community Based Organizations in Kitui County, Kenya".**

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you

EDWIN OBUNGU
FOR: DEAN, GRADUATE SCHOOL

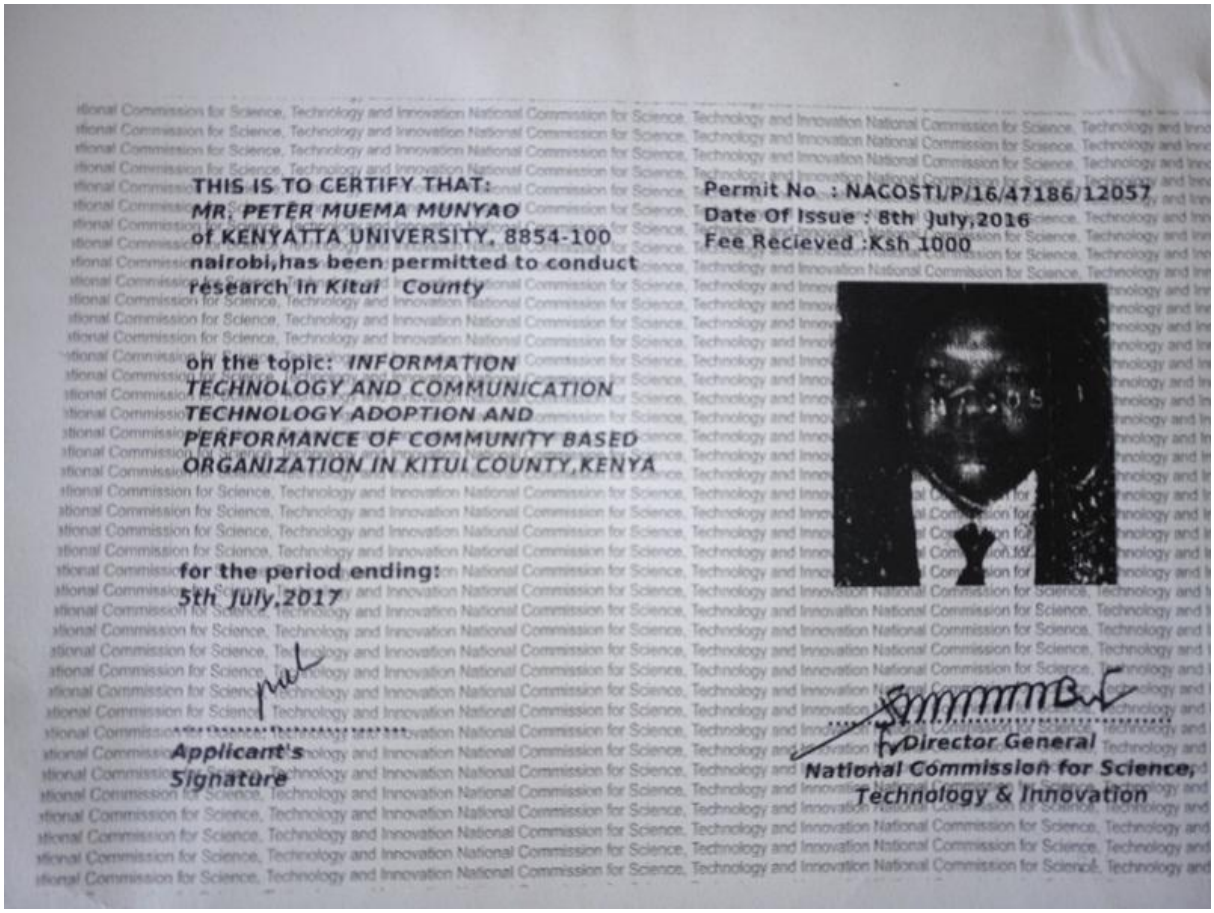
c.c. Chairman, Accounting and Finance Department.

Supervisors:

1. Ms. Gladys Kimutai
   Department of Accounting and Finance
   Kenyatta University

EO/rwm

Appendix iii: NACOSTI Permit



THIS IS TO CERTIFY THAT:
MR. PETER MUEMA MUNYAO
of KENYATTA UNIVERSITY, 8854-100
nairobi,has been permitted to conduct
research in *Kitui County*
on the topic: *INFORMATION TECHNOLOGY AND COMMUNICATION TECHNOLOGY ADOPTION AND PERFORMANCE OF COMMUNITY BASED ORGANIZATION IN KITUI COUNTY,KENYA*
for the period ending:
5th July,2017

Permit No : NACOSTI/P/16/47186/12057
Date Of Issue : 8th July,2016
Fee Recieved :Ksh 1000

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation

Appendix iv: Questionnaires

Instructions: Please read the answer the questions as appropriately as possible. It is advisable that you answer or fill in each section as provided. Tick (√) where appropriate.

Section A: Demographic Information

1. Field of specialization of the Organization.

a) Health [ ]

b) Environmental Conservation [ ]

c) Water and Sanitation [ ]

d) Youth based [ ]

e) Food sustainability [ ]

f) Education [ ]

e) Other (specify) [ ]

2. Indicate your gender. Kindly tick one

a) Male [ ] b) Female [ ]

3. Indicate your appropriate age bracket.

a) Below 30 years [ ] b) 31-40 Years [ ] c) 41-50 Years [ ]

d) Above 50 Years [ ]

4. Kindly indicate your highest level of academic qualification.

a) Certificate/Diploma [ ] b) Bachelor's Degree [ ]

d) Masters [ ] c). PhD [ ]

d). other (specify)……..

5. How many years have you worked in this organisation? (Tick (√) where appropriate).

a) Less than 5 Years [ ] b) 5-10 Years [ ]

c) 11-15 Years [ ] d) 16-20 Years [ ]

d) Above 20 Years [ ]

Section B: ICT Infrastructure

6. Has your organization adopted ICT Solutions?

Yes [ ] No [ ] Yes, but partially [ ]

7. Which of the following ICT connectivity infrastructure has your organization adopted to support or integrated to support the ICT solutions?

a) Fibre connectivity [ ] b) Fixed line connectivity [ ]

c) Radio connectivity [ ] d) Mobile telephone [ ]

e)Wimax [ ]

b). others (specify)…….....

8. What is the quality of the connectivity?

a) Fast [ ] b) Good [ ] c) Slow [ ]

9. How has the ICT infrastructure you integrated benefitted your organization?

	Yes	**No**
i). improved efficiency	[ ]	[ ]
ii). improved customer service	[ ]	[ ]
iii). Wider market reach	[ ]	[ ]
iv) . Improved communications and information sharing	[ ]	[ ]

10. To what extent do you agree with the following statements on ICT infrastructure in your organization? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

Statements on Infrastructure	1	2	3	4	5
Our organization has sufficient computer hardware resources					
Our organization has adequate telephone line connections					
Our organization has reliable and fast internet connectivity					
Existing infrastructure supports future system upgrade (scalability)					
The existing ICT infrastructure enhances efficient running of ICT solutions and service delivery					

11. How else does ICT infrastructure influence performance of CBOs?

……

……

……

Section C: Management support

Statement on management support	1	2	3	4	5
The management facilitates organization to undertake System Monitoring at regular time to avoid breakdowns					
Management has invested and continues to invest in ICT facilities					
Management facilitates staff on training of new and emerging Technologies related to ICT					
Management supports the staff by attending ICT project					

Statement on management support	**1**	**2**	**3**	**4**	**5**
The management facilitates organization to undertake System Monitoring at regular time to avoid breakdowns					
Management has invested and continues to invest in ICT facilities					
Management facilitates staff on training of new and emerging Technologies related to ICT					
meetings					

Section D: Information and communication Technology skills

12. How would you rate the ICT knowledge level of your staff?

Excellent [ ] Good [ ] Average [ ] Poor [ ]

13. To what extent do you agree with the following statements on ICT knowledge in your organization? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

Statements on ICT skills	**1**	**2**	**3**	**4**	**5**
The staff have the requisite knowledge to use ICT resources in the organization to access					
The staff are able to access websites to search for information by through of mobile or other internet					

connections					
The organization offers training to the staff whenever there is software or hardware upgrade					
There is induction of new staff on use of ICT resources					

14. Has ICT skills influenced performance of your organization in any other way apart from the above? Please explain

……

……

……..

Section E: Information Communication Technology Government Policy

15. Are you aware of the government policy on ICT?

Yes [ ] No [ ]

16. If yes, has the ICT policy improved or enhanced ICT adoption in your business?

Yes [ ] No [ ]

17. How do you rate affordability of internet and other connectivity platforms?

a) Very affordable [ ] b) affordable [ ] c) costly d) very costly

18. To what extent do you think development of content in local language would improve performance of you organization

Not at all [ ] Small extent [ ] Moderate extent [ ] Great extent [ ]

Very great extent [ ]

To what extent do you agree with the following statements on Government ICT policy in your organization? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

Statements on Government ICT Policy	**1**	**2**	**3**	**4**	**5**
The staff have acquainted themselves with the Government ICT policy					
The government policy on ICT has affected our business					
There is adequate enforcement of Government ICT regulations on offenders by the government					
Government ICT Policy regarding use of ICT resources process is followed to the letter					

19. How else has government ICT policy influenced performance in your organization?

……

……..

Section F: ICT Services

20. To what extent has ICT influenced the following aspects of performance in your organization? Use a scale of 1-5, where 1 Not at all, 2 is Small extent, 3 is Moderate extent, 4 is Great extent and 5 is Very great extent

Statement	**1**	**2**	**3**	**4**	**5**
There is adequate security and sufficient storage of data					
Sharing of information is sufficient					
Training of ICT use is a cost effective					
Communication systems in the organization is sufficient					

Section G: Organizational Performance

21. To what extent has ICT influenced the following aspects of performance in your organization? Use a scale of 1-5, where 1 Not at all, 2 is Small extent, 3 is Moderate extent, 4 is Great extent and 5 is Very great extent

Statements on CBO performance	**1**	**2**	**3**	**4**	**5**
ICT in the organization reduced operational costs and increased productivity					
ICT has increased the market share through improved products and market innovations					
ICT in the organization has increased revenue and profits ,thereby alleviating poverty					
ICT has improved efficiency across the business processes					

21. How else has the adoption of information and communications technology in your organization affected or influenced your organizational performance?

…….

……

……

Thank You for Your Participation

Appendix v: Map of Kitui County

Source: County Government of Kitui, 2014