

**INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON
SERVICE DELIVERY IN COUNTY GOVERNMENTS IN KENYA, A CASE OF
MURANG'A COUNTY GOVERNMENT**

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**A Research Project Submitted in Partial Fulfillment of the Requirements for the Award of the
Degree of Master of Arts in Project Planning and Management of the University of Nairobi**

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DECLARATION

This project is my original work and has not been presented for a degree in any other University.

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DEDICATION

This project is dedicated to my loving Mother Wanjeri Wagunya, grandmother Gathoni and sister Gathoni Karungari who encouraged me on the value for education without whose support, it would not have been possible to get this far.

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ABBREVIATIONS AND ACRONYMS

ICT –	Information Communication Technology
IFMIS –	Integrated Financial Management Information System
GHRIS-	Government Human Resource Information System
DOI -	Diffusion of Innovations
TAM-	Theory Acceptance Model
TPB-	Theory of Planned Behavior
SPSS -	Statistical Package for Social Sciences
POS-	Point of Sale
NSSF-	National Social Security Fund
NHIF-	National Health Insurance Fund
NACOSTI-	National Commission for Science, Innovation and Technology

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ABSTRACT

ICT has become an integral component in development and telecommunication across the entire globe and in all industries may it be the public, non-governmental organizations or private sectors. The innovation/development of mobile based applications e.g. uber and banking mobile platforms together with the enhanced speed of internet globally has enhanced the growth of ICT and its usage. County governments in Kenya introduced with the new constitution are not an exception of this technology. During the adoption phase of ICT, majority of the people perceived it as a tool for enhancing business than management of government institutions. Being an emerging trend, the area on adoption of ICT in management of counties lacks sufficient literature and a lot needs to be done. The study examined influence of ICT adoption on service delivery in Kenyan County governments, examined the influence of staff expertise on adoption of ICT in service delivery, explored the influence of attitude on adoption of ICT in service delivery, determined the influence of financial implication on adoption of ICT in service delivery and to assess the influence of ICT infrastructure on adoption of ICT on service delivery. The study adopted descriptive survey research design. The target population of the study included County government staff and the residents. Sample of 384 respondents were issued with questionnaires but only 273 responded. Primary data obtained from questionnaires was studied and analyzed using Statistical Package for Social Sciences (SPSS) version 20. Reliability of the research instruments was validated via a pilot test which was issued to 38 respondents which led to some changes in the questionnaires which was the main item for data collection during the actual field work. From the study the independent variables in the study were positively related to adoption of ICT in service delivery in Murang'a County and the variables were statistically significant at 5% significance level. It was also established that holding Staff expertise, financial implications, attitudes & ICT infrastructure to constant, service delivery would be at 0.371. A unit increase in staff expertise would result to an increase in adoption of ICT by 0.172, a unit increase in financial implications would lead to an increase in adoption of ICT by 0.029, unit increase in attitudes would result to an increase in adoption of ICT by 0.671 and finally a unit in increase ICT infrastructure would result to an increase in adoption of ICT in service delivery by 0.319. This confirms that there was a positive relationship between the independent variables and service delivery. From the Pearson's correlation, the findings showed that there was a positive correlation coefficient between staff expertise and service delivery as indicated by correlation factor of 0.616. This was significant at 95% and was found to be statistically significant since the significant value was 0.000 which was less than 0.05. This agreed with the expectation that increase in staff expertise would lead to increase in service delivery. There was a positive correlation coefficient between attitudes and service delivery as indicated by correlation factor of 0.934. This was significant at 95% and was found to be statistically significant at 0.000. There was a positive correlation coefficient between influence of financial implications and service delivery as indicated by correlation factor of 0.738. This was significant at 95% and was found to be statistically significant at 0.000. There was a positive correlation coefficient between influence of ICT infrastructure and service delivery as indicated by correlation factor of 0.806. This was significant at 95% and was found to be statistically significant at 0.000. The study confirmed positive correlation coefficient between staff expertise, attitudes, financial implications and ICT infrastructure against the dependent variable service delivery. The study recommends more study on ICT adoption on service delivery in other counties and countries especially in the developed economies.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Due to advancements in technology, the world has become a global village with instantaneous communication between continents, something that seemed impossible 50 years ago (Pearsons, 2011). Organizations today, operate in different continents as if they are in one office, and some have one single head office that manages all operations using ICT technologies. Information has become centralized and is accessible from any part of the world due to the ease of internet and communication. A case in point is Safaricom Company Limited which despite operating and working and having its major operations in Kenya kept its communication servers in Germany until recently. This meant that every communication had to go through the servers abroad even before reaching the destination. Advances in ICT technologies have made it easy for Safaricom and many other organizations of its nature. In essence, the use of systems has eased business operations across the globe.

The African continent too has not been left out in the globalization. Multinationals operating within the African continent has also been able to utilize the ICT advancements to achieve an edge above competition. Private businesses and organizations as far as South Africa have branches in North and West Africa which are managed by one person who is able to observe all happenings in all the branches. Centralization of functions at one head office has been key in management of multinationals. Certain organizations have been able to centralize departments like Finance, Human Resource among others in one country (Davies, 2002). Regionally, several organizations operating within East Africa have utilized ICT Technologies to ease operations. Banks like Equity bank although being managed from Kenya have operations in over four east African countries.

Internally in Kenya, the performance of organizations has been greatly influenced by the use of systems. Over the past few decades, the country has continually embraced information communication technology systems to enhance communication and development. With the promulgation of the new constitution and introduction of County governments in the year 2013, ICT systems were recognized as one of the key drivers of achieving progress within forty seven counties (Mugambi, 2015). The information provided within the counties are further broken down to the sub counties and wards. County governments have utilized information communication technology

systems in provided services to its residents, provision of information and revenue collection among other services (Kariuki, 2014).

1.1.2 Service Delivery

Service delivery is characterized as a service or action that addresses the issues of a client or can be connected by a client. To be successful, service delivery ought to have these traits like: accessible and convenient at time and space scales that the client needs; Dependable and solid in that they should be conveyed on time to the required client specification; Usable implying that they should be exhibited in client particular configurations with the goal that the customers can completely understand; Useful implying that they have to react properly to client needs; Credible for the client to certainly apply to basic leadership and responsive and adaptable to the advancing client needs.

Mutali (2008) while citing Parasuraman, Zeithmal and Berry (1991) documented five factors of service delivery quality to include dependability, responsiveness (eagerness to encourage clients and incite benefit authorization), and the ability to pass on trust, sympathy and tailored regard for clients. Other service delivery quality estimation instruments examines have discovered that organizations have the accompanying practices: key idea and best administration bolster, elevated expectations of service delivery conveyance, benefit observing frameworks, fulfilling client objections and accentuation on worker fulfillment.

Service delivery conveyance is a consistent, cyclic process for creating and conveying client centered administrations. Quality administration conveyance includes a correlation of desires with execution. As indicated by Lewis and Booms (1983) benefit worth is a proportion of how fine a conveyed service delivery coordinates the client's desires. The primary motivation to center around quality is to address client issues while remaining monetarily focused in the meantime. This implies fulfilling client needs is critical for the continued survival and it requires understanding and augmenting of operational processes, differentiating issues swiftly, and methodically, setting up considerable and firm administration execution measures and estimating customers' loyalty and other execution results. As per Kundenbindun (2008) benefit quality is a business organization's term and portrays the level of accomplishment of an arranged administration.

1.1.3 Information Communication Technology Systems

ICT as any innovation is utilized to help data gathering, preparing, circulation and utilization (Beynon-Davies, 2002). As per Al-Qallaf and Al-Azmi, (2002) ICT is indeed the combination of computers and interchanges innovations for the establishment, preparing, dispersal and as well as transmission of data. ICT comprises of equipment, programming, information and correspondence innovation. The development of Information and Communication Technology has set an avenue to faster and improved correspondence, proficient ability, recovery and treatment of information and trade and use of data to its clients, whether it is people, organizations, gathering or associations or governments. Data and Communication Technologies must be utilized with the end goal to make and convey an administration, or, in other words has a compelling effect for the organizations and for the nationals.

Utilization of Information and Communication Technology (ICT) in the services is gone for changing the manner in which services direct their tasks. With the end goal to accomplish this vision, it is imperative that the Government stocks the vital ICT abilities set for the usage and support of e-government. With the end goal to have a fruitful e-government, the Information and Communication Technology (ICT) arrangements, which are at the plain base of the e-government foundation, must be reachable by all nationals (Evans and Yen ,(2005).

GHRIS is programming utilized by the Murang'a County Government to deal with the whole human asset part of every one of their representatives. The framework enables workers from Murang'a County to get to their compensation slips from the solace of their homes as long as there is web availability. GHRIS can be related with the Theory Acceptance Model (TAM) since it is a data structured assumption that aligns how clients come to recognize and employ innovation. Cap, proposed by F. Davis (1989) is generally acknowledged as an imperative commitment in the investigation of selection of web advances and particularly in the administration. The model recommends that when clients are given another innovation, many components influence their choice about how and when they will utilize it.

IFMIS is a system used for public financial management within the government and more so in the County governments. It interlinks planning, budgeting, audit, accounting, control and reporting. Due to increased demand for greater transparency and accountability in management of public funds in the government, the Kenyan government launched IFMIS system in 2003 which was later re-

engineered due to many teething problems encountered with it. In February 2011, the re-engineering was launched under the Re-engineering Strategic Plan (2011-2013). In Murang'a County government, IFMIS was adopted after the devolved government came into place. IFMIS was rolled out under Section 8 of the County Governments' Public Finance Management Transition Act. IFMIS was adopted by Murang'a County Government to facilitate revenue collection, enhance reporting capabilities in the county, automation of the procurement processes, provide accurate information on the Government's financial position and improve decisions making in County management level.

Revenue softwares are softwares developed to be used in the County government to assist in revenue collection. Point of Sale (POS) systems are utilized by Murang'a County Government to ease revenue collection from County residents. Payment of parking and other County fees using POS saves time for both the residents and the government attendant (Reijswoud, 2008). Another common platform for processing payments in Murang'a County is the use of Safaricom's Mpesa paybill to process payments. The platform also saves time and cost for the users. POS systems also assist in curbing corruption cases within the County because the payments are not done using cash (Reijswoud, 2008). Digital milk and coffee machine weighing scale are also in use. The electronic machines have been deployed by the County government to help the citizens get the actual kilograms on their coffee and milk products.

1.2 Statement of the Problem

County governments in Kenya were introduced within the last 7 years and operating since 2013. The main objective of having County governments was to empower the people of Kenya and devolve services in order to improve the lives of people (Mbote, 2012). Kenya has over the recent past experienced a surge in the use of ICT in service delivery. According to Fintech (2016), the government of Kenya has over the past one decade increased the use of ICT technologies in service delivery. Being an emerging trend, the amount of literature in the management of County governments in Kenya remains scarce.

Modern private and public institutions have embarked on the use of ICT in gaining a competitive edge over their competitors. Chun (2015) did a survey study on African governments and implementation of technology on service delivery. In his study, Chun found out that government stability enhanced implementation of ICT in operations while unstable governments had challenges in implementing technologies. In a similar study done by Mago (2014) in Zimbabwe that sought out to

find the effect of leadership on ICT and service delivery, the findings revealed that good will from the top government leadership was critical in implementing ICT projects in government. The above studies do not focus on effects of ICT on service delivery which the current study intends to address.

Although the studies had significant contributions and scope, they focused on different variables and units of study leaving a gap in literature as they were not addressing effects of ICT on service delivery among County governments in Kenya. For easier management of the counties, the national government and the County governments have continued to adopt the use of ICT technologies to be seamless in service delivery. The concept of County governments in Kenya is an emerging concept and not many studies have been done on how to improve its efficiency. Despite the adoption of ICT technologies in managing counties, there is no study that has been undertaken to scrutinize the effects of ICT Technologies on service delivery within the counties. This scholarly piece suggests that if certain strategies to increase adoption of ICT are implemented, then it will enable County governments to be more effective in examination of delivery.

1.3 Purpose of the Study

The purpose of this study was to investigate the influence of ICT adoption on service delivery in County governments in Kenya: a case of Murang'a County Government.

1.4 Objectives of the Study

This study aimed to achieve the following objectives;

1. To examine how staff expertise in ICT influence service delivery in county governments
2. To assess how attitudes in ICT influence service delivery of County governments.
3. To determine how financial implications in ICT influence service delivery in county governments
4. To assess how ICT infrastructure in ICT influence service delivery of County governments.

1.5 Research Questions

This study intended to address the following research questions;

1. How does staff expertise in ICT influence service delivery in County governments?
2. How do attitudes in ICT influence service delivery in county governments?
3. How do financial implications in ICT influence service delivery in county governments?
4. How does ICT infrastructure influence service delivery in county governments?

1.6 Significance of the study

This study demonstrates the scope of ICT use in County governments in Kenya with the intention to get a grip of the relationship, which exists between technological advancement and Service delivery to the people. The ICT infrastructure implementation generated employment opportunities for graduates in IT, who will install, handle, manage, and also train users on how to handle the new technologies

The research offered more information into the already existing knowledge of ICT implementation in County governments in Kenya. The outcome of this study will add to the existing knowledge. The studies assisted the policy makers come up with guidelines on how to develop future ICT infrastructure. They will use the outcomes of the study to convey practical policy documents that will cope with the challenges and hindrances of ICT implementation in County governments. The study was useful to County governments since the main unit of study is Murang'a County Government. The County can use the study to improve its service delivery within the County and other counties to can benchmark from the findings of the study on how to better implement ICT to enhance service delivery.

The study benefited residents of Murang'a by offering a better understanding of products and services offered by the County government and how they can access information. This should further improve the service delivery offered by the County. The study will be significant to scholars because it aims at filling a gap in knowledge. Scholars will be able to use the study as a basis or research in related areas. Also, under suggestions for future studies, the study will advise scholars on other related fields that they can research on.

1.7 Basic Assumptions of the Study

The research was centered on several assumptions. The research was solely conducted in Murang'a County and the findings will be applicable to other areas outside of Murang'a. However, this may not always be the case since different counties within the country may have different ICT factors affecting service delivery. The study does not consider other macro-economic factors that may affect service delivery to citizens like government legislations regarding use of ICT applications like IFMIS among others. This may however affect usage of ICT by County governments in service delivery. The study further does not consider the changes in ICT technologies which have remained constant and such new innovations may in the near future affect the way County governments uses ICT in

service delivery. The researcher used questionnaires as the key tool for data gathering. In cases where there are biased responses, the questionnaire may not give the most precise findings.

1.8 Delimitations of the Study

One of the core delimiting factors affecting this research is that it was solely conducted in Murang'a and specifically amongst County government officials and citizens. The findings affecting service delivery in Murang'a County by use of ICT may differ from the factors affecting service delivery in other counties. This study did not factor in the ongoing amendments of legislations by the County governments and thus any legislation that may affect usage of ICT in regards to service delivery may distort findings of the study. The research was however done based on the current operations and legislation that have been set by the County government.

1.9 Limitations of the study

The study was faced with respondents challenge as some of them were reluctant to fill the questionnaire and some especially those working with the county seemed to politicize the exercise. These were mitigated by using an employee of the county to issue the questionnaire and use of introductory letter as well.

During data collection the researcher was faced by climatic problems and sometimes the researcher got stuck on the muddy roads and sometimes being rained on in the remote areas.

Some respondents feared that the information they gave could be used against them but the researcher advised that the respondents name will not appear anywhere in the questionnaire and the information will be treated with great confidentiality.

1.10 Definitions of Significant Terms Used in the Study

ICT adoption: part of ICT which deals with the policies, procedures and methods which will be used to incorporate technology usage in the county.

Staff expertise: This is the foundation of trustworthiness of a person who is perceived to be an expert in an area or topic owed to his or her training, study or experience in the subject matter.

Attitude: a way of feeling or having an opinion about something.

Service delivery in county governments: is the manner in which an entity provides information and services using technology applications in the county.

ICT infrastructure: These are the platform hardware, software and strategies that are used to implement communication technology so as it can be used in service delivery

Government policy: These are government plans, policies and regulations that dictate how certain ICT projects and strategies may be implemented

1.11 Organization of the study

The study was structured into five chapters. Thus the first chapter of the study, the researcher starts with; background of the study, problem statement, purpose of the study, research objectives, research questions, significance of the study, basic assumptions of the study, delimitations of the study, limitations of the study, definitions of key terms and significance of the study. The second chapter of the study includes; Introduction, Service Delivery in Counties, Staff expertise and service delivery, attitude and service delivery, Financial implications and service delivery, ICT infrastructure and service delivery, theoretical framework, Conceptual framework, Summary of literature and knowledge gaps. In the third chapter of this research project, the researcher brings out the methodology section of the research. This includes the introduction, research design, target population, sample size and Sampling Procedure, research instruments, pilot testing of instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis techniques, ethical issues in research and operationalization of the variables. In the fourth chapter of the research, the researcher brought out the data analysis, presentation and interpretation. This will include; Introduction, Questionnaire Return Rate, Demographic Information, findings on staff expertise on service delivery, Findings on attitude on service delivery and findings on financial implications on service delivery, findings on ICT infrastructure on service delivery, Correlation of Variables and summary of Chapter Four. The last chapter of this research project will be a summary of findings, discussions, conclusions and recommendations, Introduction, Discussion of Findings, Influence of staff expertise on service delivery, influence of attitudes on service delivery, influence of financial implications on service delivery and influence of ICT infrastructure on service delivery to Murang'a County residents, Conclusions, Recommendations and Suggestions for Further Study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature that is relevant to the study. This chapter highlights the influence of Information Communication Technology Adoption on service delivery in County governments in Kenya. The chapter also discusses and analyses the literature reviewed mainly focusing on Staff expertise, attitude, financial implications and ICT infrastructure on service delivery. The chapter also includes the theoretical framework, conceptual framework, summary of literature review and knowledge gaps to be filled by other researchers.

2.2 Service Delivery in County Governments

Service delivery is a shared phrase used to define the distribution of basic resources citizens depend on such as sanitation infrastructure, water, electricity, housing and land by the government (Osambo, 2016). Mugo (2015) who added that service delivery is a process by which the government provides a platform for the citizens to access and perform their rights has as well also adapted this explanation.

In a study by Sharma (2017) on the effects of IFMIS on government procurement, the interviewees had varying expectations on what the system needed to offer them. Some of the respondents expected the system to facilitate automated revenue collection from the various businesses trading with the government, enhance reporting capabilities within government departments, automation of the procurement process in terms of requisition, tendering, contract award and payment, provide accurate information on the Government's financial position and improve decisions making within government departments in terms of procurement. With the different understanding of services and expectations from the government, Sharma found out that people within the young age bracket of 20-40 years had more expectations from the government as compared to people who are slightly older.

Evans and Yen (2016) in a survey study on the evolving relationship of government and citizens, domestic as well as international development, which established that governments that had adopted technology systems were more efficient when compared to governments that had not adopted technological systems in service delivery. The online survey that randomly interviewed citizens within various African countries found out that citizens in countries where technology was implemented were positive about government service delivery while citizens in countries that had

not implemented technology had more complains about the government. Further, governments that had invested heavily in ICT systems provided services quickly and were fast in decision making than their counterparts who had not invested in technology.

2.3 Staff Expertise and Service Delivery in County Governments

Expertise is exceptional knowledge or skill that is developed by study, training, or practice. Employee technical expertise is positively related to performance. Staff development through training geared for enhancing technical knowledge and competencies of staff by way of improving their knowledge base enhancing better performance (Nyanjom, 2013). Through the conduct of career training and development, the level of expertise and knowledge increases hence improving on employee work performance that is directly related to the attainment of service delivery goals.

This match of organizational goals against set ones leads to better service delivery as goal congruence is attained. The numerous benefits that are achieved through employee personal career development include: additional employees morale, low production costs, improved employee confidence. All these benefits positively impact performance (Becker, 2011). This implies that counties that have adopted employee training will achieve optimal performance as employees are willing and ready to give in their all towards successful project completion that in turn positively affects performance if laid plans were properly carried out.

An association exists between employee technical expertise and quality of service rendered that in turn affects overall performance. The realization of better work performance in turn leads to prompt execution of assigned tasks hence improving on overall attainment of desirable service delivery outcomes. The possession of technical know-how enables employees to be more motivated hence more cooperative, considerate and keen during task execution. This in turn leads to excellent service delivery that is directly related to optimal County government performance (Wilson & Frimpong, 2004). The presence of rewards systems which matches the level of employee skills and expertise motivates staff hence directs their behavior towards the successful execution of set goals and strategies. This in turn leads to overall success of organizations. In addition, the retention of highly qualified staff enables organizations to obtain high performance in service delivery due to low staff turnover. In essence, when counties are able to retain highly qualified employees, at optimal performance, then the employees exhibit high degree of expertise that is needed to enhance

successful service delivery strategies. When employees perceive compensation to be equitable and fair with regards to their level of skills and expertise, then satisfaction will improve on their level of commitment to the County that leads to both enhanced performance of employees and the County at large (Turner, 2014).

Top management ought to depict their leadership skills and capabilities by giving purposeful instructions to subordinate employees. This will in turn improve on performance on present assignments since the juniors will be better placed to apprehend given assignments. In essence, workers who are better informed will make less operational mistakes thus increasing on County efficiency hence improve on positive outcomes of service delivery. Service Delivery is a function of employees' competencies, knowledge and skills. In fact, competences and service delivery are positively correlated as optimal project results cannot be obtained if the engaged labor force is incompetent (Burke, 2013). Additionally, service delivery performance is also influenced by intelligence, training and development, knowledge level and personality traits (Phillips, 2013). (Tanui, 2014) stated that a County human resources system that comprises of a desirable teamwork that accommodates all the technical expertise and contributions of all team members positively impacts employee job satisfaction and motivation that in turn leads to keen execution of assigned tasks hence leading to optimal service delivery as a result of enhanced tasks execution.

2.4 Attitude and Service Delivery in County Governments

Attitude is the pattern of behaviors in individuals towards an idea, object, person or situation especially learned and acquired when solving a problem. Kanyua (2015). The four components of attitudes are affective (feelings), cognitive (opinions held), conative (inclination for action) and evaluative (positive or negative stimuli)

Developers of ICT and its clients in an association decide and contrarily influence its performance. Data frameworks mentality may oppose advances which debilitately change their present status, power and working propensities. As it were, the current demeanor, Thong (1999), will affect the manner in which individuals see the value and convenience of a given ICT. Individuals additionally perceive some hierarchical culture standard like needing to physically go to gatherings and in a similar area. There is discernment that web conferencing are for exceptional occasions just according to the TAM hypothesis.

With an end goal to ruin the specialists' endeavors, the laborers utilize hidden obstruction. At the point when the advisors request a few information on a specific subject, a laborer gives them a huge report containing the data that will set aside them a greater opportunity to locate the required material. To put it plainly, the specialists are not declining to come; they are just making it more troublesome for the experts to complete their activity (Hodgetts and Hegar, 2007). As a rule, this is valid, for when an association's representatives gauge the advantages related with existing conditions against those that they accept will result from the change, they settle on keeping up things the manner in which they are.

States of mind make activities, over-burden, and authoritative turmoil, particularly to representatives influenced contrarily. Therefore, they oppose modification of business as usual. A key job in diminishing protection from change is influencing individuals to trust they will be cared for in the change procedure. This comes down to the connection between the business and the worker. The key job is human relationship administration. To keep up stable states of mind in nature particularly amid change, HR professionals must be associated with overseeing change from the minute the theme of progress is delivered. With indepth comprehension of progress, from the business goals to change administration devices and systems and worker responses to change, the HR professional fills an imperative job to cultivate effective authoritative change (Metselaar, 1997).

2.5 Financial Implications and Service Delivery in County Governments

Technological stages and applications add value and change society at all levels national, corporate, social and individual levels. Data correspondence innovation advancements realized by the correspondence stages, for example, use of electronic by government have achieved critical effect in service delivery conveyance. (Heeks and Bailur, 2007). Cost is a sum paid to deliver, get or keep up a decent or benefit. (Oliver, 2002). ICT trainings and the staggering expense of obtaining of computer are factors obstructing actualizing of computer innovation because of the lack of enough funds. Teo, Wei, and Benbasat (2003) and Liang, Saraf, Hu, and Xue (2007) utilized institutional hypothesis to think about the impacts of data innovation on hierarchical make-ups. Reception of creative innovation can regularly be clarified by other natural factors in the condition that impact ICT appropriation. The elements may incorporate providers, contenders, clients and representatives.

As per Layne and Lee (2001), e-government execution is relied upon to give access to residents at one particular point, for instance of e-citizen website page and Huduma focuses in our 47 areas. To

accomplish this data innovation guidelines and approaches are expected to keep away from any equipment and framework boundaries that would obstruct the usage of e-government frameworks. Tim, M. (2006) contends that IT models direct how ICT resources are to be obtained, overseen, and used inside the association.

Migration to electronic mediums is required by restrictions in paper based records that incorporate temporal, spatial, and financial. Also, paper-based frameworks have constrained usefulness and again numerous individuals can't perform without numerous mistakes. Having electronic systems can bolster administration in their basic leadership and furthermore enhance working effectiveness, in this manner enhancing quality in administration (Ayers, 2009). Frameworks, for example, choice and information emotionally supportive networks have been appeared to lessen blunders in medical reports (Bates, 2001).

2.6 ICT infrastructure and Service Delivery in County Governments

In all layers of government there is a strong proof of ICT use, whether it is through phones, versatile/wireless, organize switch, Personal Computers, workstation, or tablets. Therefore, these and many other different devices are viewed as indispensable to an area of government, as they help workers to speak with subjects, accomplices and one another, plan and transmit archives and records and peruse on the web and lead an extensive variety of electronic exchanges. Such technology is viewed as basic to an association; much of the time not utilized to their extreme ability to improve its execution. In both private sector and as well as government, much is needed to enhance the client's understanding, and technology can be a huge supporter of that change (Sharma, 2017).

Organizations network systems in both intra and inter organization levels have progressed thus even correspondence generally depend on computerized interchanges and are not reliant any longer on the manual and physical stages. Such help to scatter data and facilitate the manner in which work is done (Kanyua, 2015).

In private and public organizations, ICT frameworks assumes a noteworthy job in crafting information emanating from various range of avenue such as inventory control, web analytics, seals and industry information. In the event they are well taken care of accurately, would form a driver in making essential choices and also advocate the use of innovation. The technologies have drastically changed to a level never imagined before. In fact, it serves as a strong alternative for many services

previously done at home. Technologies have streamlined many procedures, speeds the rate of giving services, and reduce human mistakes accessioned by manual work.

2.7 Theoretical Framework

This study was anchored on three theories: Theory of planned behavior, technology acceptance model and diffusion of innovations. These theories were selected because of their explanations on service delivery in a technologically defined environment.

2.7.1 Theory of Planned Behavior (TPB)

The theory of planned behavior is a theory about the link between beliefs and behavior. The theory states that attitude toward behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and behaviors (George, 2004). The Theory of Planned Behavior (TPB) started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behavior at a specific time and place. The theory was intended to explain all behaviors over which people have the ability to exert self-control (Hsu and Chiu, 2004). The key component to this model is behavioral intent. Behavioral intentions are influenced by the attitude about the likelihood that the behavior will have the expected outcome and the subjective evaluation of the risks and benefits of that outcome. The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control). It distinguishes between three types of beliefs - behavioral, normative, and control (Venkatesh, Morris, Davis and Davis, 2003).

The TPB is comprised of six constructs that collectively represent a person's actual control over the behavior: Attitudes which refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest. It entails a consideration of the outcomes of performing the behavior; Behavioral intention which refers to the motivational factors that influence a given behavior where the stronger the intention to perform the behavior, the more likely the behavior will be performed; Subjective norms which refers to the belief about whether most people approve or disapprove of the behavior (Hsu and Chiu, 2004). It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behavior; Social norms refer to the customary codes of behavior in a group of people or larger cultural context. Social norms are considered normative, or standard, in a group of people; Perceived power refers to the perceived presence of factors that may facilitate or impede performance of a behavior (Venkatesh, Morris, Davis and Davis, 2003). Perceived power contributes to a person's perceived behavioral control over each of those factors. Perceived behavioral control refers to a person's perception of the ease or difficulty of performing the behavior of interest. Perceived behavioral control varies across situations

and actions, which results in a person having varying perceptions of behavioral control depending on the situation. This construct of the theory was added later, and created the shift from the Theory of Reasoned Action to the Theory of Planned Behavior.

2.7.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) deals with the prediction of the acceptability of an information system. TAM is an adaptation of the Theory of Reasoned Action (TRA) to the field of information systems (Brown and Venkatesh, 2005). The purpose of this model was to predict the acceptability of a tool and to identify the modifications which must be brought to the system in order to make it acceptable to users. This model suggests that the acceptability of an information system is determined by two main factors: perceived usefulness and perceived ease of use (Venkatesh, Morris, Davis and Davis, 2003). TAM posits that perceived usefulness and perceived ease of use determine an individual's intention to use a system with intention to use serving as a mediator of actual system use. Perceived usefulness is also seen as being directly impacted by perceived ease of use (Venkatesh, Morris, Davis and Davis, 2003).

2.7.3 Diffusion of Innovations (DOI)

Diffusion of Innovations (DOI) is one of most cited theory. Indeed, Rogers' (1983) book 'Diffusion of innovations' was the single most cited individual work, receiving 286 citations. DOI is a general theory of how new ideas are spread and adopted in a community, and it seeks to explain how communication channels and opinion leaders shape adoption. Rogers (1983) proposed the first process model, a five-stage model of the implementation and adoption of innovation in organizations. Moore and Benbasat (1991, 1992) used DOI to develop an instrument designed to measure the various perceptions that an individual may have of adopting an information technology (IT) innovation. The instrument was intended to be a tool for the study of the initial adoption and subsequent diffusion of IT innovations within organizations

2.8 Conceptual Framework

A conceptual framework is a pictographic or diagrammatic depiction of the relationship that exists between the dependent and the independent variable. In general, much late examination into Information correspondence advancements has kept on illustration on the conceptualizations by Magali and Cliquet,(2012), Burmann, et al, (2009)) , Hassan (2011), Pappu, et al, (2005), Buil, et al, (2008) and Lee, et al, (2011)) and Aaker's measurements are regularly used as they are the most

adequate (Lee, et al., 2013). The Keller and Aaker model bear great similarities as they both focus on the mindset of the citizens and their response towards the governments, which is important to this research paper in particular.

Credibility research comparing the County governments performance has not been conclusive or consistent (Flanagin and Metzger, 2010). Research about service delivery in County governments applying modern advanced technologies may perhaps offer new dimensions

Independent variables

Dependent Variable

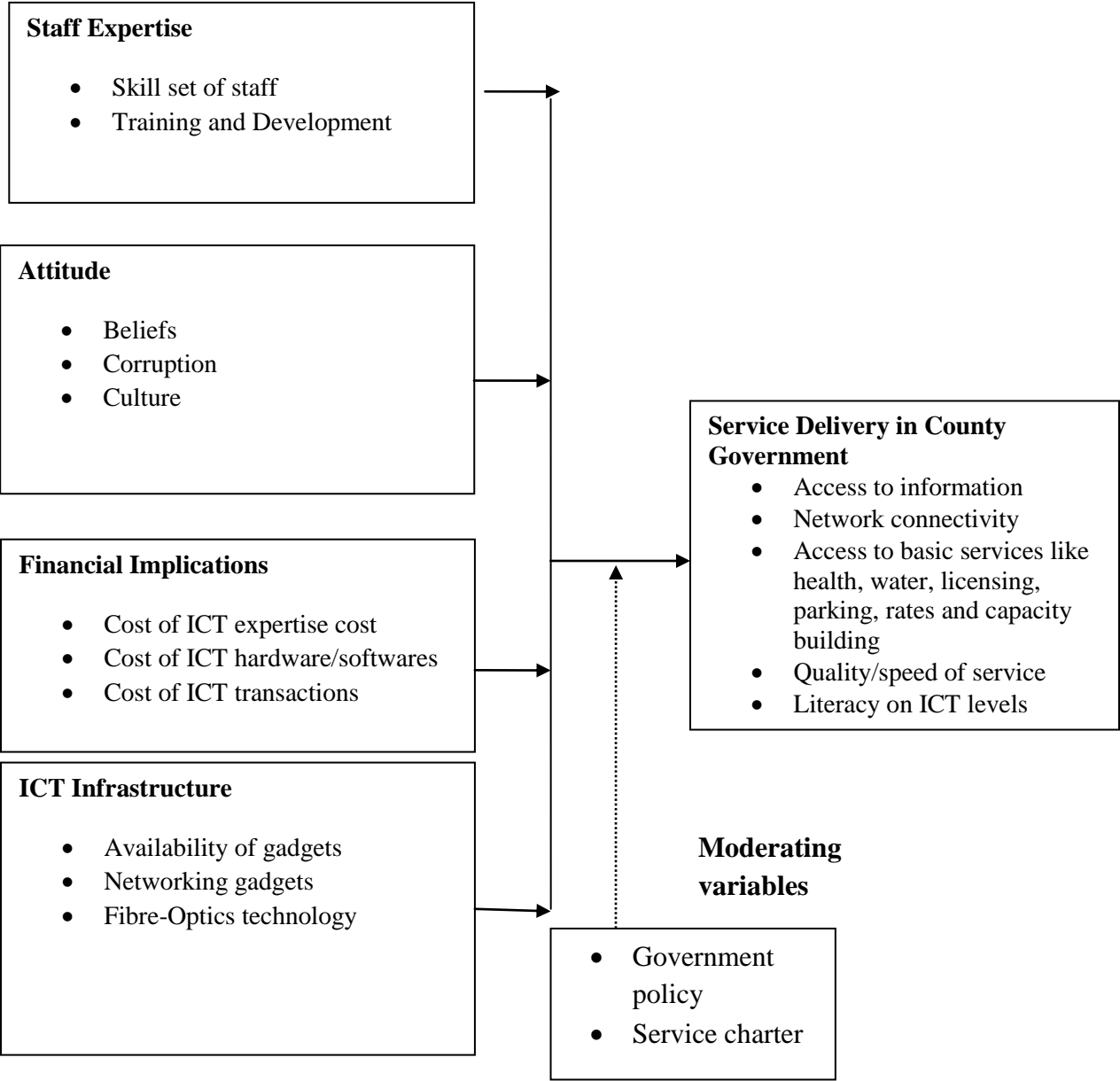


Figure 1: Conceptual Framework

2.9 Knowledge Gaps

Table 2. 1: Knowledge gap

Variable	Author (Year)	Title of the study	Findings	Knowledge gap
Staff Expertise	Nyanjom (2013)	Factors influencing employee retention in the state corporations in Kenya	Staff expertise is directly related to service delivery in state corporations	It does not focus on service delivery within counties
	Ng’ethe, Iravo & Namusonge (2012)	Determinants of Academic Staff Retention in Public Universities in Kenya	The study found that academic staff should be better incentivized to ensure retention	The study is based on academic staff and not County government
	Njiru (2008)	Challenges facing Human Resource Management Practices in State Corporations	Lack of staff expertise hinders service delivery within state corporations	The thesis does not focus on service delivery within County governments
Attitude of Staff	Ologbo & Sofian (2012)	Individual Factors and Work Outcomes of Employee Engagement	The study found out that staff attitude affects performance	The study does was not carried out in the public sector

	Muriithi (2007)	A survey of staff attitudes towards adoption of ISO 9000 certification in Kenya power & lighting company (KPLC)	Most staff have a negative attitude towards change due to fear of unknown	The study is carried out only at Kenya power
Financial Implications	Kirui (2011)	An assessment of the use and impact of mobile phone-based money transfer services in Kenyan agriculture	The study found out that more farmers in Kenya would adopt mobile money if the cost of transaction reduces.	The study only focused on farming
	Kagunda (2016)	Effects of cost on adoption of ICT among SME's	Cost of ICT software and hardware hinders many SME's from fully adopting ICT	The study was done among Kenyan SME's
ICT Infrastructure	Sharma (2017)	Exploring Best Practices in Public-Private Partnership (PPP) in e-Government	The study found out that good ICT infrastructure is important to ensure service delivery within government	The study focused on PPE management other than County governments
	Bates (2011)	Effects on technological	The study found out that public	The study focused on

		Automations on service delivery among public universities	universities with automated systems offered better services and had higher reach	public universities only
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2.10 Summary of Literature

This chapter has presented the literature informing the study. After the introduction, the researcher has dealt into the thematic aspects of the study starting with service delivery among County residents. Here, the researcher began by introducing how other researchers have studied the correlation between ICT and service delivery. Both private institutions and governments that had invested heavily in ICT systems provided services quickly and were fast in decision making than their counterparts who had not invested in technology.

The ICT factors that are perceived to influence service delivery amongst citizens in Murang'a County have also been discussed in details as per available empirical data. Staff expertise within the County governments from the point of recruiting skilled staff to training and developing current staff to enhance service delivery in counties to managing attitude amongst employee can improve service delivery within counties in Kenya. The researcher has also discussed financial aspects and service delivery on the investment on ICT technology on service delivery including the costs incurred by citizens in transacting with County governments. The last variable of discussion is on ICT infrastructure and how it can affect service delivery. Availability of ICT infrastructure and connectivity in technology has huge potential in impacting service delivery positively or negatively.

Under the theoretical review, the researcher has discussed several theories that guide the research. Innovation diffusion theory discusses how ICT technology has undergone the stages of adoption within the counties and the theory of reasoned actions. The researcher has also brought out a conceptual framework which a basic diagrammatic representation showing the interrelation among the dependent and independent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology for the study and highlights the research design, target population, sampling technique, data collection instruments and data analysis and presentation.

3.2 Research Design

The study used descriptive survey research design that involved not only observing but at the same time described the behavior of a subject without affecting it. Descriptive research helps in determining and endeavor to tell the way it is in addition tries to thoroughly describe such things as much as possible in terms of attitudes, values, behaviour as well as and characteristics, according to Mugenda and Mugenda, (2003). Descriptive research was useful in getting information about the present status of an occurrences to describe what exists with respect to variables or circumstances in a situation. This study considered this design as the best as it helped in facilitating collecting of reliable and correct data, which would holistically describe the effects of ICT on service delivery in Murang'a County government.

3.3 Target Population

Target population is indeed the particular population where the material should be sought. According to Ngechu, (2004) a population is basically a well-defined , services or set of persons, events and elements and, set of things or rather households that are under investigation. In the research, the people of interest were the citizens and staff of Muranga County government. At the end of the year 2014 the number of people believed to be living in Muranga County government were 1,238,450, having increased from 942,581 in 2009 census according to a Kenyan economic report (2014). The research in addition interviewed staff working in Muranga County government to determine their account on impact of ICT adoption on service delivery.

3.4 Sample Size and Sampling Procedures

The research adopted use of simple random sampling method that is indeed a probability method. The sample size is rather part of the whole population whose stuffs are considered to provide extensive information concerning entire population (Kasomo, 2007). Sampling was the mechanisms or process used in picking a number of objects or characters for a given study in a manner that the sample

selected signify the bigger population (Cooper and Schindler, 2006). The research methodology labels the sample size for the study as well as the sampling system applied to obtain the necessary sample. The sample shows the total sum of respondents selected from the target population.

3.4.1 Sample size

In statistics, a sampling size is indeed a device or a source from which the sample is rather drawn. It involves all those within the population that can be used for sampling and may in most cases involves household, institutions, or individuals (Chandran, 2014). Sampling is the method of taking a given sum of individuals to be used in a given study in such way the persons characterize the larger population from which they are chosen according to (Bryman,2008). The main method used in the events you want to decide which size to be used is the extent with which sample represent the population. To determine the sample size, the population table recommended by (Krejcie, Robert V.and Morgan, Daryle W. 2009) was used.

Muranga County is divided into 7 sub-counties, which include Kiharu, Maragwa, Kangema, Kandara, Mathioya, Gatanga and Kigumo. A sub-County administrator and members of the County assembly who represent the people at the County assembly level at the County headquarters head each sub-County. Using the (Krejcie, Robert V.and Morgan, Daryle W. 2009) indeed a sample of 384 was used. Proportionate sampling was used and a sample of 55 respondents were interviewed in each sub-County.

Considering the study objective, purposive sampling was used to attain a sample of 50 County staff officers and a sample of 334 customers as shown below in Table 3.1. The sampling points were the County headquarters offices for the County staff and several centers within the County for customers.

Table 3. 1: Sampling size

Level	Population	Sample
County staff	367	50
Customers	1,238,370	334
TOTAL	1,238,450	384

3.4.2 Sampling procedure

Sampling is a mechanism a scholar uses to collect objects, people and areas to study (Kombo, etal 2006). Sampling is a method of choosing a given number of persons from the population in way which the chosen groups has components represented of the features found in the whole population (Orodho and Kombo, 2002). Therefore in regards to this, the research used proportionate sampling that actually divide sub counties and then bring in random sampling.

3.5 Research instruments

The questionnaire is one of the most recommended research tools that gather data over a large sample according to Wilkinson and Birmingham, (2003). In the process, the researcher administered questionnaires to Murang'a County employees both from the lowest to the highest level. In addition other questionnaires were administered to customers. The questionnaires were administered by the process of drop and collect strategy within a period of two weeks. The collection procedure was highly undertaken to ensure it achieved a 100% response rate

3.5.1 Piloting of the study

Indeed for any questionnaire to offer the best results it must have readability and validity according to Oso and Onen (2009). That is if the questionnaire can achieve what is meant for, it refers to validity. On the other hand reliability measures the relevance. Reliability and validity testing of the questionnaire, a pre-test is advisable.

In ensuring validity the investigation tools were given to many specialists with huge experience in regards to County government matters and service delivery to determine the relevance of each item in

relation to the objectives and at the same time 39 individuals who lived in Muranga County forming 10% of the sample size which was used in determining reliability. A sample size of 10 to 20% from the entire area of study is a good number of participants to use when enrolling into a pilot, (Baker, 2012). The main reason for this was to customize the questionnaire in such a way that respondents do not encounter problems when responding to questions. Expert opinions were again sought to comments on the suitability of the questions and advice on the questionnaires structure. The questionnaires were hand delivered and issued during day time to the respondents to achieve a good response rate as well as objective response.

Any academic research should have the capacity to objectively meet trustworthiness and dependability according to Seale (1999). The credibility of any research report lies at the core centre of subjects conversed as reliability and validity.

3.5.2 Validity of Research Instruments

Validity describes the extent to which any measurement tool succeeds in terms of describing or rather qualifying what is meant to measure (Seale 1999). Validity is if the research tools after all established tests as long as the tools measure exactly what it claims to measure. The questionnaires which was the tool used in the research to gather or collect data have taken in to consideration all are measure are fulfilled in order to ensure validity. Validity was determined by the principle of content validity index. CVI was realised by accumulating up the items rated 3 and 4 and dividing this sum by the overall number of items in the questionnaire. Oso and Onen. (2009), says that a validity coefficient of at least 0.70 is okay as a binding study hence acceptance of the study tools as binding for this research according to the expert. According to Mugenda and Mugenda (2003) a value of 0.8 is considered reliable, thus the instrument was considered reliable.

3.5.3 Reliability of Research Instruments

Patrons (2012) points out that validity and reliability indeed are two essential aspects in research to an extent that any qualitative researcher should bear in mind in while analysing results, scheming a study and determining the value of study. White (2009) stresses the significance of incorporating into research design the principle of validity and reliability. Reliability tries to explore if it is possible for another researcher to use the same design and thus get similar findings. Reliability is indeed the measure of the extent with which a search tools can get results regarding data after several and repeated trials according to Mugenda and Mugenda (2009). Therefore a reliable tool is the one that

yields consistent results when used many times in data collection from a sample that have been sampled randomly from sample population.

The questionnaires used had a Likert scale items which the respondents responded to. For the purpose of ensuring reliability, reliability examination Cronbach's alpha was used by SPSS. The value of the alpha coefficient varies from zero to one and could be used to define the reliability of factors mined from dichotomous (in other words, questions with two possible outcome or answers) and/or multi-point organized questionnaires (rating scale: 1 = strongly disagree, 5 = strongly agree).

3.6 Data collection procedures

The study employed together both primary and secondary data to aid in collecting information. An interview guide was used to collect primary data. Moreover, Open-ended questions thus were contained in interview guide. Open-ended questions was helpful as they ensured the researcher collect qualitative data. The idea was to ensure better understanding and even a more robust and comprehensive scrutiny of finding from the study. The interview guide had two sections. In this case, therefore it was important to highlight the next part, which was dedicated to allow understanding of the responses in relation to influence of ICT on service delivery, which was the main part of the study put on focus. The study was also added more data from secondary sources that focused on existing materials such as articles, government reports, and papers concerning impacts of ICT on service delivery within County governments.

Both the staff and citizens who responded were better placed to assists as they always cherish to serve in their different capacity a leading role in the County. In addition, there were better positioned to respond to the questions given that they were in good position on matters of service delivery in Muranga County. The interview guide hence were managed through personal interviews to enable extra probing. Secondary data was attained via evaluation of applicable documents, critical amongst them the County government reports and related papers.

3.7 Data Analysis techniques

Data collected was quantitative and qualitative in nature. The descriptive statistical tools used helped the researcher to describe the data and determine the extent used. Analysis was done quantitatively and qualitatively by use of descriptive statistics. This included tables, percentages, and frequencies. In addition, advance statistical techniques (inferential statistics) will also be considered.

Data analysis tool will be SPSS (statistics package of social science), percentages, tabulations, and cumulative frequencies. Tables will be used to summarize responses for further analysis and facilitate comparison. This will generate quantitative reports through tabulations, percentages, and measures of central tendency. Cooper and Schindler (2003) note that the use of percentages is important for two reasons; first they simplify data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons. In addition univariate and inferential statistics will be used to provide generalization of the findings.

Analysis of quantitative data was obtained by the use of Pearson correlation and multiple regressions. Pearson correlation is a measure of linear correlation between two variables. The multiple regression model was used to show extent of the relationships .Regression model:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where:

Y is the dependent variable: service delivery

β_0 is a Constant

β_1X_1 is the first variable: Staff expertise

β_2X_2 is the second variable: Attitudes

β_3X_3 is the third variable: Financial implication

β_4X_4 is the fourth variable: ICT infrastructure

For this study work, the researcher sought to investigate the influence of ICT adoption in service delivery in Murang'a County Government.

3.8 Ethical issues in Research

During the whole study, scholar ensured research ethics as well as professionalism were observed. Research participation was on voluntary basis. Privacy and confidentiality was observed as well. This was achieved by avoiding acts of misconduct in research, such as data fabrication and weird behaviors. Consent to undertake the study was sought from the right department (nacosti) before commencement of data collection. During data collection, the researcher clearly explained reason and worth of the study to the respondents.

3.9 Operationalization of the variables

A variable is indeed empirical property which has capacity to take two or more values. It is after all any property that can variate, be it in quantity or quality (Mugenda and Mugenda, 1999). A dependent

variable actually is a variable whose effect rest on manipulation of the independent variables. In this study for instance, the dependent variable is service delivery. Independent variable on the other hand is a variable that is manipulated to cause changes in the dependent variable (Allen et al., 1995). In this study the independent variables were attitude, staff expertise, financial implications and ICT infrastructure.

An operational definition nevertheless designates how variables are defined and measured throughout the study. Therefore is a portrayal of a variable, objects in terms of definite method or set of validation tests used to conclude not only presence but also quantity. It is usually aimed to model a conceptual definition. Nominal scales rather was used to investigate various variables in the research (Allen et al., 1995).

Table 3. 2: Operationalization of Variables

Research objective	Variable	Indicators	Measurement scale	Type of analysis	Tool of analysis
To examine the influence of staff expertise on adoption of ict in service delivery in County government	Staff expertise	Skills of employees Training and development	Ordinal	Descriptive Correlation	SPSS
To explore the influence of attitude on adoption of ict in service delivery in	Attitudes	Fear of the unknown beliefs	Ordinal	Descriptive Correlation	SPSS

County government		Corruption			
To determine the influence of finances on adoption of ict on service delivery in County government	Finances availability	Cost of investment Cost of transaction	Ordinal	Descriptive Correlation	SPSS
To assess the influence of ict infrastructures on adoption of ict in service delivery in County governments	ICT infrastructure	Availability of gadgets Fibre technology Networking gadgets	Ordinal	Descriptive Correlation	SPSS

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents data analysis, interpretation and presentations of the findings obtained from fields work. The chapter presents the background of the respondents and findings of the analysis based on the objectives and questioners. The researcher used descriptive statistics to analyze data and tables to present the data.

4.2 Questionnaire return rate

The study targeted a sample of 384 respondents out of which 273 of the questioners were returned which totals to 71%. According to Mugenda and Mugenda (2003) regarding a good response rate as it states a response rate of 50% was suitable for reporting as well as analysis as shown in table below.

Table 4. 1: Response rate

Response rate	Frequency	Percent
Responded	273	71
Non response	111	29
Total	384	100.0

4.3 Demographic characteristics of the respondents

Demographic study involves statistical study regarding human populations for some analysis. The study sought to know the age, academic credentials, gender, time stayed in the County and the department one works.

4.3.1 Gender distribution of the respondents

The study asked the respondents to actually indicate their gender. The outcomes are tabulated in Table 4.2

Table 4. 2: Distribution of respondent’s gender

Gender	Frequency	Percent
Male	115	42.1
Female	158	57.9
Total	273	100.0

The study pursued to study on respondents distribution by their gender and majority of the respondents 158(57.9%) were female and 115(42.1%) were male

4.3.2 Distribution of respondents by Age

The respondents were requested to give their age and on that note the results were analyzed in table 4.3

Table 4. 3: Distribution of respondents by age bracket

Age bracket	Frequency	Percent
<25 years	20	7.3
26-34 years	50	18.3
35-44 years	91	33.3
45-54 years	89	32.6
Above 55 years	23	8.5
Total	273	100.0

From the data displayed in Table 4.3 , majority of all probed respondents 91(33.3%) were aged 35-44 years, 89 (32.6%) were aged 45-54 years, 50 (18.3%) were aged 26-34 years,23(8.5%)were aged above 55 years and 20(7.3%) were aged below 25 years old. Majority of the respondents which is also the majority of the working population are aged between 35-54 years which form 65.9%.

4.3.3 Employed by Murang’a County Government

The study wanted to identify if respondents were employed by the County government or not. The results were tabulated in table 4.4 and later explained

Table 4. 4: Distribution of respondents by those employed by County

County staff	Frequency	Percent
Yes	32	11.7
No	241	88.3
Total	273	100.0

From table 4.4, only 32(11.7%) of the respondent were workers of the County government as few questioners had been administered to them and the rest 241(88.3%) were non-County government employees.

4.3.4 Distribution of respondent by departments

The researcher wanted to know the departments the respondents were attached in and those not working in the County and tabulated in table 4.5

Table 4. 5: Distribution of respondents by departments

Departments	Frequency	Percent
Education and youth	5	1.8
Agriculture	2	.7
Finance and ICT	4	1.5
Transport and energy	2	.7
Health services	5	1.8
Public service	6	2.2
Environment and climate change	6	2.2
Land planning and housing	1	.4
Water and irrigation	1	.4
Others	241	88.3
Total	273	100.0

Table 4.5 indicate the departments worked by different staff who were interviewed and 6 (2.2%)were interviewed from the public service and environment and climate change division,5(1.8%)from education and youth departments and health services,4(1.5%) were interviewed from the department of finance and ICT,2(0.7%)were from transport and energy,1(0.4%)were from the departments of land

planning and water and irrigation and the bulk 241(88.3%) were not employees of the County and had jobs in other economic sectors within the County in both the formal and non- formal areas.

4.3.5 Respondents distribution by Education level

The study on the same note sought to know the education level of all respondent as tabulated in table 4.6 and the results discussed below.

Table 4. 6: Distribution of respondents by education level

Education level.	Frequency.	Percent
Primary	37	13.5
Secondary	170	62.3
Tertiary	60	22.0
None	6	2.2
Total	273	100.0

It is evident from table 4.6 that 170(62.3%) of the respondent had KCSE qualifications, 37(13.5%) had CPE/KCPE qualification, 60 (22%) had post-secondary academic credentials while 6(2.2%) had none academic credentials at all. These indicate that majority of the residents are literate and can for instance read and answer questioners without major guidance and as well perform their duties well for those in the white collar jobs.

4.3.6 Period respondent lived in the County

The researcher wanted to know the time the respondents had lived in the County. This was to help the researcher know how each participant was conversant with ICT adoption trails within the County. The findings were tabulated in table 4.7

Table 4. 7: Distribution of respondents by time lived

Lived	Frequency	Percent
0-5 years	8	2.9
6-10 years	27	9.9
11-15 years	45	16.5
Above 15 years	193	70.7
Total	273	100.0

From the table 4.7 above, the findings show that majority of people have lived in Murang’a County for more than 15 years 193(70.7%), 45(16.5%) between 11-15 years, 27(9.9%) between 6-10 years and 8(2.9%) have stayed in Murang’a for a period below 5 years. The study reveals that the residents are people who have lived in the County for long thus well conversant with the activities and doings of the County.

4.4 Staff expertise in ICT and service delivery in County Governments

Expertise in staff can greatly attribute to efficient adoption and use of ICT skills within the County. Staff expertise was sought to be among the major factors influencing adoption of ICT in service delivery within the County and table 4.8 sought to investigate how the respondent agreed with the statement

Table 4. 8: Distribution of respondents on staff expertise

Measurement scale	Frequency	Percent
Strongly disagree.	7	2.6
Disagree.	12	4.4
Moderate.	16	5.9
Agree.	95	34.8
Strongly agree.	143	52.3
Total	273	100.0

From the table 4.8 above, the study sought to research how staff expertise influence adoption of ICT in service delivery and majority of respondents agreed that staff expertise positively influence adoption of ICT as 143(52.4%) strongly agreed, followed by 95(34.8%) who agreed. Only 7(2.6%) of the total respondents strongly disagreed that staff expertise do not influence adoption of ICT in service delivery.

4.4.1 Training and development in ICT and service delivery in County Governments

The study sought to research on how training and development among the residents influenced ICT adoption in the County .The respondent filled as tabulated in table below.

Table 4. 9: Distribution of respondents on training and development

Measurement scale	Frequency	Percent
Strongly disagree	2	0.7
Disagree	6	2.2
moderate	25	9.2
Agree	84	30.8
Strongly agree	156	57.1
Total	273	100.0

Table 4.9 tabulates how training and development of staff influence adoption of ICT in service delivery and majority of the respondent agreed that training of staff positively influence adoption of ICT as 156(57.1%) strongly agreed, followed by 84(30.8%) who agreed. Only 2(0.7%) of the total respondents strongly disagreed that staff training and development do not influence ICT adoption in service delivery.

4.4.2 Skills in ICT and service delivery in County Governments

Skill is an asset in adoption of ICT as in either way technology has to be managed. The study asked the respondent how their agree skills influence adoption of ICT in service delivery.

Table 4. 10: Distribution of respondents on skills

Measurement scale	Frequency	Percent
Strongly disagree	2	.7
Disagree	25	9.2
moderate	53	19.4
Agree	103	37.7
Strongly agree	90	33.0
Total	273	100.0

From the table 4.10 above, majority of the respondent seemed to agree that skills positively influence adoption of ICT as 103(37.7%) strongly agreed, followed by 90(33.0%) who strongly agreed. Only 2(0.7%) of the total respondents strongly disagreed that staff skill set do not influence ICT adoption

4.4.3 Hindrances on adoption of ICT in service delivery

The respondents were asked whether they were some knowledge gaps hindering adoption of ICT among staff and the residents and the results were tabulated as below

Table 4. 11: Views by respondents on hindrances of ICT

ICT hindrances	Frequency	Percent
Yes	193	70.7
No	80	29.3
Total	273	100.0

From the table 4.11 above, it is clear that majority of the respondents 193 (70.7%) agreed that ICT knowledge gaps among the employees hinder seamless adoption of ICT in service delivery as only 29.3% were for a different opinion. From the findings, more trainings and induction should be deployed to make sure people are good as far ICT skills and implementation is concerned.

Table 4. 12: Analysis of Staff expertise

	Mean	Std. Deviation
Staff expertise play a role in adoption of ICT in service delivery in county governments	4.46	.791
ICT skills sets enhance ICT adoption in service delivery in county governments	4.08	.884
Training and developments enhance ICT in service delivery in county governments	4.56	.671

The study sought to investigate how staff expertise could influence ICT adoption in service delivery. From the finding good ICT skills influence service delivery with the application of ICT as shown by a mean score of 4.46 and a standard deviation of 0.791. ICT skills set from both the staff and services beneficiaries also greatly influence service delivery with a mean of 4.08 and a standard deviation of 0.884, respondents agreed that adoption of ICT in service delivery in county governments is greatly

influenced by training and developments of staff as shown by a mean of 4.56. It was evident from the respondent that skills and know how among the staff boost ICT implementation in service delivery

4.5 Attitudes in ICT and service delivery in County Governments

The researcher wanted to know the influence of different attitudes among different residents on adoption of ICT in service delivery as they vary. The findings were interpreted on table 4.13

Table 4. 13: Distribution of respondents on attitudes

Measurement scale	Frequency	Percent
Strongly disagree	78	28.6
Disagree	81	29.7
moderate	69	25.3
Agree	11	4.0
Strongly agree	34	12.4
Total	273	100.0

From the table 4.13 above, the study sought to investigate how attitudes influence adoption of ICT in service delivery and from above results, many of respondents disagreed that attitudes influence adoption of ICT 81(29.7%) in the County, followed by 78(28.6%) who strongly disagreed. 69(25.3%) were moderate and 34(12.4%) strongly disagreed had an impact in ICT adoption.

4.5.1 Influence of belief in ICT and service delivery in County Governments

The researcher sought to know the influence of different beliefs among different residents on adoption of ICT in service delivery as they vary. The finding was therefore interpreted on table 4.14

Table 4. 14: Distribution of respondents on beliefs

Measurement scale	Frequency	Percent
Strongly disagree	95	34.8
Disagree	76	27.8
moderate	9	3.3
Agree	51	18.7
Strongly agree	42	15.4
Total	273	100.0

From the table 4.14 above, the study sought to know how belief influence adoption of ICT in service delivery and from the outcomes, many of the respondents strongly disagreed that beliefs influence adoption of ICT 95(34.8%) in the County, followed by 76(27.8%) who disagreed, 9(3.3%) who were moderate, 51(18.7%) who agreed and finally 42(15.4) who strongly agreed. From the study, it can be therefore resolved that beliefs do not play a major negative obstacle in adoption of ICT in service delivery in Murang’a County

4.5.2 Cultural influence in ICT and service delivery in County Governments

The researcher wanted to know the influence of different culture among different residents on adoption of ICT in service delivery as they vary. The finding was interpreted on table 4.15

Table 4. 15: Distribution of respondents on culture

Measurement scale	Frequency	Percent
Strongly Disagree	142	52.0
Disagree	51	18.7
moderate	27	9.9
Agree	31	11.4
Strongly Agree	22	8.1
Total	273	100.0

From the table 4.15 above, more like the role played by beliefs in adoption of ICT in service delivery, culture plays more like a similar role as majority of the respondents 142(52%) strongly disagreed that culture influence ICT adoption in the Murang’a County 51(18.7%) disagreed, 27(9.9%) of the respondents were moderate, 31(11.4%) agreed and 22(8.1%) strongly disagreed. From the study, it can be concluded that beliefs and culture are not strong in opposing technology in Murang’a County as opposed to other counties

4.5.3 Corruption influence in ICT and service delivery in County Governments.

The researcher wanted to know how corruptions influence adoption of ICT in service delivery. The finding were interpreted below

Table 4. 16: Distribution of respondents on corruption

Measurement scale	Frequency	Percent
Strongly disagree	49	17.9
Disagree	75	27.5
moderate	37	13.6
Agree	23	8.4
Strongly agree	89	32.6
Total	273	100.0

From the finding on the table 4.16, which sought to find out how corruption influence adoption of ICT in service delivery, majority of the respondents 89(32.6%) strongly agreed, 23(8.4%) agreed, 37(13.6%) were moderate, 75(27.5%) disagreed while 49(17.9%) strongly disagreed that corruption affect ICT adoption in service delivery.

4.5.4 Corruption as a hindrance on adoption of ICT

The researcher wanted to find out whether corruption had an influence on adoption of ICT on service delivery and below are the results from the respondents.

Table 4. 17: Respondents view on corruption hindrance to ICT

Corruption as a hindrance	Frequency	Percent
Yes	142	52.0
No	131	48.0
Total	273	100.0

From table 4.17 above, 142(52%)of the respondents which is slightly above half were in agreement that corruption was a hindrance to ICT adoption in the County.131(48%) of the respondents did not agree that corruption was a hindrance to ICT adoption. The researcher concluded that corruption was mostly practiced within the County government top officers whom misappropriated some of the funds set aside to adopt ICT services within the County.

Table 4. 18: Analysis of Attitudes

	Mean	Std. Deviation
Attitudes enhance ICT adoption in service delivery in county governments	2.58	1.277
culture influence adoption of ICT in service delivery in county governments	2.19	1.368
Beliefs in people influence ICT adoption in service delivery in county governments	2.70	1.496
Corruption enhance ICT adoption in service delivery in county governments	3.33	1.494

The table 4.18 shows findings from respondents on how their perceive attitudes. The respondents who were for the idea that attitudes affect ICT service delivery in county governments were shown to have a mean of 2.58, those respondents who were for culture affect service delivery were shown by a mean of 2.19. The respondents who were for the idea that beliefs influence ICT adoption in county governments were represented by a mean of 2.70 and those for the idea that corruption enhanced ICT adoption in service delivery were represented by a mean 3.33

4.6 Financial implications in ICT and service delivery in County Governments

The study sought to know to what levels financial implication has influence on adoption of ICT in service delivery .Below are finding from the respondents tabulated in table 4.17 below

Table 4. 19: Distribution of respondents on financials

Measurement scale	Frequency	Percent
Strongly disagree	32	11.7
Disagree	12	4.4
moderate	53	19.4
Agree	62	22.7

Strongly agree	114	41.8
Total	273	100.0

From the table 4.19 above, the study sought to examine impact on financial implications in adoption of ICT in the Murang'a County government and from those who respondents' majority strongly agreed that financial implications influence adoption of ICT in service delivery as at 114(41.8%). Nevertheless 62(22.7%) agreed, 53(19.4%) were moderate. Only 32(11.7%) who strongly disagreed that financial implications have influence in adoption of ICT in service delivery.

4.6.1 ICT Expertise Cost in ICT and service delivery in County Governments

The researcher wanted to find out from the respondents how they would perceive ICT expertise costs within the County and the results are tabulated in the table below

Table 4. 20: Distribution of respondents on expertise cost

Measurement scale	Frequency	Percent
Strongly disagree	53	19.4
Disagree	41	15.0
moderate	34	12.5
Agree	82	30.0
Strongly agree	63	23.1
Total	273	100.0

From the table 4.20 above, the study sought to investigate how the cost of ICT expertise influence adoption of ICT in Murang'a County government and from the respondents the majority 82(30%) agree that ICT expertise costs influence ICT adoption on service delivery, 63(23.1%) strongly agree, 34(12.5%) were moderate 41(15%) disagreed, and 53(19.4%) strongly disagreed. From the study, the cost of ICT workforces expertise will influence adoption but on a neutral level as respondents on agree and strongly agree add up to 53.1%.

4.6.2 Hardware/ Software cost in ICT and service delivery in County Governments

The researcher wanted to get from the respondents whether hardware equipment's and various software applications costs had influence on adoption of ICT in Murang'a County

Table 4. 21: Distribution of respondents on hardware\software cost

Measurement scale	Frequency	Percent
Strongly disagree	12	4.4
Disagree	51	18.7
moderate	49	17.9
Agree	88	32.2
Strongly agree	73	26.7
Total	273	100.0

From the table 4.21 above, the study pursued to scrutinize how cost of hardware/software and software affects adoption of ICT in Murang’a County government. Hardware/software costs included purchase and upgrades of the same. From the respondents, 73(26.7%) strongly agree that Hardware/software costs influence ICT adoption on service delivery, 88(32.2%) agree, 49(17.9%) were moderate 51(18.7%) disagreed, and 12(4.4%) strongly disagreed.

4.6.3 Transaction cost in ICT and service delivery in County Governments

The researcher wanted to discover from the respondents whether the budget of ICT related transactions had influence on adoption of ICT in Murang’a County

Table 4. 22: Distribution of respondents on Transaction cost

Measurement scale	Frequency	Percent
Strongly disagree	19	7.0
Disagree	53	19.4
Moderate	15	5.5
Agree	72	26.4
Strongly agree	114	41.7
Total	273	100.0

From the table 4.22 above, it is evident from the respondents that the cost of transaction in adoption of ICT in Murang’a County in service delivery do not drag on one side thus having no drastic influence as the response was evenly distributed with 19(7%) who strongly disagreed, 53(19.4%)

disagreed, 15(5.5%) who were moderate, 72(26.4%) who agreed and 114(41.8%) who strongly agreed.

4.6.4 Cost of software and adoption of ICT

The researcher wanted to discover from the respondents whether the cost of software applications had influence on adoption of ICT in Murang'a County

Table 4. 23: Distribution of respondents on views of software applications cost

Cost of software	Frequency	Percent
Yes	125	45.8
No	148	54.2
Total	273	100.0

From the table 4.23 above, it was noted that 125(45.8%) of the respondents believed cost of software have a huge impact on adoption of ICT in service delivery. On the other hand, more than half of respondents did not affirm that cost of software has influence on ICT adoption comprising 148(54.2%).

Table 4. 24: Analysis of Financial Implications

	Mean	Std. Deviation
Financial play a key role in adoption of ICT in service delivery in county governments	4.00	1.204
ICT expertise cost enhance ICT adoption in service delivery in county governments	3.45	1.373
Hardware / software cost enhance ICT adoption in service delivery in county governments	3.77	1.103
Transaction cost influence ICT in service delivery in counties	3.98	1.238

The table shows findings of financial implications from respondents and majority of the respondents agreed that financials play a key role in adoption of ICT in service delivery as shown by a mean of

4.00 .Mobile\ICT gadgets transaction costs, costs of hardware and software, and ICT expertise cost was agreed to affect ICT adoption greatly by the respondents with a mean of 3.98, 3.77 and 3.45 respectively. From the findings, majority of the respondents agreed that availability of finances have a great influence on ICT implementation in county governments.

4.7 Influence of ICT infrastructure in service delivery in County Governments

The study sought to find out how ICT infrastructure influence ICT adoption in Murang’a County government

Table 4. 25: Distribution of respondents on ICT infrastructure cost

Measurement scale	Frequency	Percent
Strongly disagree	43	15.8
Disagree	17	6.2
moderate	42	15.4
Agree	98	35.9
Strongly agree	73	26.7
Total	273	100.0

As outlined above, it was noted that majority of those who responded agreed influence of ICT infrastructure positively impacted on adoption of ICT in Murang’a County government as 98(35.9%)of the respondents agreed, 73(26.7%) strongly agreed, and 42(15.4%) were moderate. However 43(15.8%) strongly disagreed that ICT infrastructure has an impact on adoption of ICT in service delivery.

4.7.1 Influence of ICT gadgets in service delivery in County Governments

The study sought to find out how ICT gadgets influence ICT adoption in Murang’a County government.

Table 4. 26: Distribution of respondents on ICT gadgets

Measurement scale	Frequency	Percent
Strongly disagree	53	19.4
Disagree	82	30.0
moderate	63	23.1
Agree	22	8.1
Strongly agree	53	19.4
Total	273	100.0

From the table 4.26 above, the influence of ICT gadgets was sought to influence adoption of ICT in Murang’a County as follows: Those who strongly disagreed were 53(19.4%), 82(30%) disagreed, 63(23.1%) were moderate, 22(8.1%) agreed and 53(19.4%) strongly agreed.

4.7.2 Influence of fiber technology in ICT and service delivery in County Governments

In the recent past, fibre technology have been widely used in our country to foster ICT integration and the study sought to know how the same have been adopted in the Murang’a County and whether its impact have been felt in ICT adoption n service delivery

Table 4. 27: Distribution of respondents on fibre technology

Measurement scale	Frequency	Percent
Strongly disagree	22	8.1
Disagree	26	9.5
moderate	12	4.4
Agree	81	29.7
Strongly agree	132	48.4
Total	273	100.0

From table 4.27 above, majority of the respondents 132(48.4%) strongly agreed that fiber technology have highly boosted adoption of ICT in service delivery in the County. A number of the residents testified to access the services from their hand phone appliances and from their home computers.

81(29.7%) of the respondents agreed, 12(4.4%) were moderate, 26(9.5%) disagreed and 22(8.1%) strongly disagreed.

4.7.3 Influence of network connectivity in ICT and service delivery in County Governments

The study sought to find out how network connectivity influence ICT adoption in Murang’a County government

Table 4. 28: Distribution of respondents on network connectivity technology

Measurement scale	Frequency	Percent
Strongly disagree	42	15.4
Disagree	15	5.5
moderate	85	31.1
Agree	52	19.0
Strongly agree	79	28.9
Total	273	100.0

From table 4.28 above, majority of the respondents 79(28.9%) strongly agreed that network connectivity influence adoption of ICT in Murang’a country as far as service delivery is concerned to a great extent, 52(19%) agreed, 85(31.1%) were moderate, 15(5.5%) disagreed and 42(15.4%) strongly disagreed

4.7.4 Influence of transaction costs in ICT and service delivery in County Governments

The researcher wanted to find out the influence of transaction costs in adoption of ICT in Murang’a County government. The respondents responded either using a yes or a no.

Table 4. 29: Distribution of respondents on transaction costs views

Transaction costs	Frequency	Percent
Yes	118	43.2
No	155	56.8
Total	273	100.0

From table 4.29 above, 155(56.8%) of the respondents do not agree that transaction costs influence ICT adoption in service delivery while 118(43.2%) support the fact that ICT transaction costs may influence its adoption in service delivery in Murang’a County.

Table 4. 30: Analysis of ICT Infrastructure

	Mean	Std. Deviation
ICT infrastructure play a role in ICT adoption in service delivery in county governments	3.73	1.249
ICT gadgets influence ICT in service delivery in county governments	2.91	1.402
Influence of fiber technology promote ICT in service delivery	4.21	1.127
networking equipment and connectivity promote ICT adoption in service delivery in county governments	3.61	1.271

The respondents strongly agreed that fiber technology in counties have greatly impacted on ICT adoption in service delivery with a mean of 4.21. On whether ICT infrastructure plays a great role, majority of respondents agreed as shown with a mean of 3.73. Majority of the respondents did not majorly agree that ICT gadgets influence ICT adoption in service delivery with a mean of 2.91, networking and connectivity seemed to boost ICT in the county as many respondents agreed to the statement with as mean of 3.61.

4.8 Impact of Service delivery in County Governments

The study sought to find out to what extent service delivery is offered in Murang'a County in line with ICT adoption

Table 4. 31: Distribution of respondents on service delivery

Measurement scale	Frequency	Percent
Strongly disagree	89	32.6
Disagree	99	36.3
Moderate	34	12.5
Agree	33	12.1
Strongly agree	18	6.6
Total	273	100.0

Findings in table 4.31 above, shows that 18(6.6%) strongly agreed that service delivery was well provided with the use of ICT in the County, 33(6.6%) agreed, 34(12.5%) were moderate, 99(36.3%) disagreed and 89(32.6%) strongly disagreed. It is clear that the residents of Murang’a do not fully agree that the County government have fully adopted ICT in its service delivery operations.

4.8.1 Access to information in service delivery in County Governments

The study sought to find out how access to information is offered in Murang’a County in line with ICT adoption

Table 4. 32: Distribution of respondents on information access

Measurement scale	Frequency	Percent
Strongly disagree	55	20.1
Disagree	48	17.6
Moderate	43	15.8
Agree	65	23.8
Strongly agree	62	22.7
Total	273	100.0

Table 4.32 shows findings on the extent to which ICT adoption influence access to information in Murang’a County. From the findings, majority 65(23.8%) of the respondents were of the opinion that ICT adoption influence access to information, 62(22.7%) strongly agreed ICT adoption influence access to information, 43(15.8%) were moderate, 48(17.6%) disagreed and 55(20.1%) strongly disagreed that ICT adoption influence access to information

4.8.2 Network connectivity in service delivery in County Governments

The study sought to find out how network connectivity was offered in Murang’a County in line with ICT adoption

Table 4. 33: Distribution of respondents on network connectivity

Measurement scale	Frequency	Percent
Strongly disagree	47	17.2
Disagree	32	11.7
Moderate	58	21.2
Agree	82	30.0
Strongly agree	54	19.8
Total	273	100.0

The table 4.33 shows that the respondents were evenly distributed in terms of network connectivity in service delivery among the Murang'a County residents was concerned.54(19.8%) strongly agreed that network connectivity was good in line with ICT adoption, 82(30%) agreed, 58(21.2%) were moderate, 32(11.7%) disagreed and 47(17.2%) strongly disagreed.

4.8.3 Availability of social amenities (services) in County Governments

The study sought to find out how social services are offered in Murang'a County in line with ICT adoption

Table 4. 34: Distribution of respondents on social amenities

Measurement scale	Frequency	Percent
Strongly disagree	24	8.8
Disagree	13	4.8
Moderate	112	41.0
Agree	52	19.0
Strongly agree	72	26.4
Total	273	100.0

The table 4.34 above shows how efficient the respondents agreed the County government give services. 72(26.4%) of the respondent strongly agreed that services were efficiently given, 52(19%) agreed, 112(41%) were moderate, 13(4.8%) disagreed and 24(8.8%) strongly disagreed.

4.8.4 Merit of ICT

The study sought to find out from the respondents how ICT adoptions in service delivery have benefits to the residents as far as service delivery is concerned.

Table 4. 35: Distribution of respondents on ICT merits

Merits of ICT	Frequency	Percent
Yes	191	70.0
No	82	30.0
Total	273	100.0

From the table above, 191 (70%) of the respondents agreed that ICT adoption have positively influenced service delivery in Murang’a County while 82(30%) of the respondents were not for the idea that ICT adoption have positively influenced service delivery in Murang’a.

4.9 Regression Analysis

Regression analysis is indeed a statistical method concerning estimating relationship between the variables of interest in a study. Regression study was used to measure the relationship between staff expertise, culture effect, financial implications as well as ICT infrastructure which were used as the independent variables of the study against service delivery which was the dependent variable.

Table 4. 36: Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
	.867 ^a	.752	.749	.209

Predictors: (Constant), influence of ICT infrastructure, culture effect, Staff expertise effect, Financial implications

Table 4.36 establishes influences of ICT adoption in service delivery in County government of Murang'a. The study established a correlation value of 0.867 that displays a good linear dependence between the variables. The value of R-square was 0.752 and adjusted to R-square 0.749. Thus the variables used in the study on the influence of ICT adoption in service delivery in Murang'a County government contributes to 75.2% .These means there are other the variables amounting to 24.8% that influence ICT adoption in service delivery in Murang'a County government not factored in the study.

4.10 ANOVA

The ANOVA (analysis of variance test) was used in determining whether test was significant to the study or not

Table 4. 37: Anova test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	373.749	4	93.437	901.592	.000 ^b
Residual	27.774	268	.104		
Total	401.524	272			

a. Dependent Variable: Service delivery

b. Predictors: (Constant), influence of ICT infrastructure, culture effect, Staff expertise effect, Financial implications

The ANOVA test is statistically significant in predicting and determining how the independent variables influence the dependent variables. The significance value is 0.000 and it is less than 0.05 thus the model is fit. Again the F-value 901.592 with (4, 268) degrees of freedom imply the independent variables used in the study have significant effect on service delivery.

4.11 Coefficients

Table 4. 38: Multiple regression analysis

Model	Unstandardized		Standardized	t	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	.371	.106		3.490	.001
Staff expertise effect	.172	.047	-.134	-3.641	.732
Financial implications	.029	.056	.032	.520	.604
attitudes effect	.671	.021	.742	31.892	.000
Influence of ICT infrastructure	.319	.047	.358	6.734	.564

a. Dependent Variable: Service delivery

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

Y= Service delivery

β_0 = constant.

X1= Staff expertise effect

X2= Financial implications

X3= Attitude effect

X4= ICT infrastructure.

$$Y = 0.371 + 0.172X_1 + 0.029X_2 + 0.671X_3 + 0.319X_4$$

From the findings of the regression analysis if all factors (Staff expertise effect, financial implications, Attitude effect, ICT infrastructure.) were held constant, service delivery would be at 0.371. A unit increase in staff expertise will lead to 0.172 increases in adoption of ICT in service delivery. A unit increase in financial implications will lead to 0.029 increases in adoption of ICT in service delivery. A unit increase attitudes will lead to 0.671 increases in adoption of ICT in service

delivery. A unit increase in ICT infrastructure will 0.319 increase in ICT adoption in service delivery. Attitudes have the highest influence in adoption of ICT in service delivery followed by ICT infrastructure, staff expertise and financial implications respectively.

4.12 Pearson’s correlation

Pearson’s shows correlation between two factors and it varied between –1 to 1 where 1 shows strong positive correlation and -1 shows negative correlation. The 4 independent variables were analyzed against the dependent variable service delivery. The objective of this test is to know what would happen if a variable decreases or increases. The findings are tabulated in table 4.39 below

Table 4. 39: Pearson’s correlation analysis

		Staff expertise effect	Attitudes effect	Financial implications	Influence of ICT infrastructure	Service delivery
Staff expertise effect	Pearson Correlation	1	.656	.893	.827	.616
	Sig. (2-tailed)		.000	.000	.000	.000
	N	273	273	273	273	273
Attitudes effect	Pearson Correlation	.656	1	.784	.804	.934
	Sig. (2-tailed)	.000		.000	.000	.000
	N	273	273	273	273	273
Financial implications	Pearson Correlation	.893	.784	1	.934	.738
	Sig. (2-tailed)	.000	.000		.000	.000
	N	273	273	273	273	273

		N	273	273	273	273	273
Influence of ICT infrastructure		Pearson Correlation	.827	.804	.934	1	.806
		Sig. (2-tailed)	.000	.000	.000		.000
		N	273	273	273	273	273
Service delivery		Pearson Correlation	.616	.934	.738	.806	1
		Sig. (2-tailed)	.000	.000	.000	.000	
		N	273	273	273	273	273

Results in Table 4.39 clearly showed that there was a positive correlation coefficient between staff expertise and service delivery as indicated by correlation factor of 0.616. This was significant at 95% and was found to be statistically significant since the significant value was 0.000 which was less than 0.05. This agreed with what was expected from objective one that increase in staff expertise would lead to increase in service delivery. There was a positive correlation coefficient between attitudes and service delivery as indicated by correlation factor of 0.934. This was significant at 95% and was found to be statistically significant at 0.000. There was a positive correlation coefficient between influence of financial implications and service delivery as indicated by correlation factor of 0.738. This was significant at 95% and was found to be statistically significant at 0.000. There was a positive correlation coefficient between influence of ICT infrastructure and service delivery as indicated by correlation factor of 0.806. This was significant at 95% and was found to be statistically significant at 0.000

4.13 Discussion of findings

The section will discuss the results from the findings.

4.13.1 Staff expertise and adoption of ICT in service delivery

The objective was to find out how staff expertise influenced adoption on ICT in service delivery. From the findings, there was a positive correlation coefficient between staff expertise and service delivery as indicated by correlation factor of 0.616. This was significant at 95% and was found to be statistically significant since the significant value was less than 0.05. The study concluded that when

staff undergoes various training and development sessions, then productivity definitely improves thus improving productivity. Staff should be given more training on how to embrace ICT technology to perfect on service delivery (Nyanjom, 2013). Residents should also be well conversant on how to apply the technology on e.g. their portable gadgets so as they are also able to embrace the technology.

4.13.2 Attitudes and adoption of ICT in service delivery

The objective was to find out how attitudes influenced adoption on ICT in service delivery. From the findings, there was a strong positive correlation coefficient between attitudes and service delivery as indicated by correlation factor of 0.934. This was significant at 95% and was found to be statistically significant since the significant value was 0.000 which was less than 0.05. From the study, attitudes vary from one person to the other depending on family background, culture, corruption thoughts, norms among others. The attitudes have influence in adoption e.g. ICT in service delivery as for example the elderly people may be bit reluctant to changing their attitudes to the use of ICT as compared to the younger generations (Metselaar, 1997).

4.13.3 Financial implications and adoption of ICT in service delivery

The study variable sought to find out how financials influenced adoption on ICT in service delivery. From the findings, there was a strong positive correlation coefficient between attitudes and service delivery as indicated by correlation factor of 0.738. This was significant at 95% and was found to be statistically significant since the significant value was less than 0.05. The high cost associated with ICT transactions, appliances and personnel may greatly hinder its adoption in service delivery (Kanyua, 2015). To foster growth of ICT in service delivery, the national and County governments should both come up with ways and methodology to finance and equip the County with specialized staff and equipments as well as educating the residents on how the methodologies work using the appliance to achieve quality services.

4.13.4 ICT Infrastructure and adoption of ICT in service delivery

The variable on ICT infrastructure sought to find out how ICT infrastructure influenced adoption on ICT in service delivery. From the findings, there was a strong positive correlation coefficient between attitudes and service delivery as indicated by correlation factor of 0.806. This was significant at 95% and was found to be statistically significant since the significant value was less than 0.05. In the County it was observed that there were some parts with had no network neither internet access at all due to lack of satellite receivers and these could not promote adoption of ICT at all in these ICT marginalized areas. Plans should be put in place on how to connect all the areas so as there is

communication. Some gadgets are also expensive to acquire thus the County should come up with well laid plans on how their can assist the residents acquire some of the equipments and be able to use them as well so as service delivery will be well achieved.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the summary of findings, conclusions and recommendations

5.2 Summary of Major Findings

From the findings obtained, 57.9% (158) of the respondents were male while 42.1% (115) of the respondents were female. This implied there was a high female dominance in the County. Majority of the respondents 91 (33.3%) were aged 34-44 years and since the study mostly targeted economic institutions, then it's clear most of the working population in the County is between that age. Majority of the respondents 241(88.3%) were not employed by the County government thus a great percent of the resident were not working with the County government but were engaged on other institutions and economic industries.

Majority of the respondents 170 (62.3%) had secondary education, 60 (22%) had tertiary education, 37 (13.5%) had primary education, while those respondents who had none were 6 (2.2%) . From the findings it's clear that majority of the respondents were literate and could engage themselves in productive economic activities. Majority of the respondents 193 (70.7%) had lived in the County for over 15 years. This indicates majority of the respondent had a clear understanding of the counties operations, activities and governance thus could give a true picture of the position on the ground even from the questioners given.

5.2.1 Staff Expertise and ICT in County Governments

The research sought to establish the level of agreement on statements relating to staff expertise and its effect on adoption of Information Communication Technology. From the findings on staff expertise, most of the respondents agreed that staff expertise is important in influencing adoption of ICT within County governments. The researcher sought to find out how training and development among the staff and residents influenced ICT adoption in the County. As per above table 4.9, most of the respondents agreed to the statements that training and development influences adoption of ICT in County governments. A small percentage of the respondents felt that Murang'a County government was not doing enough in terms of training and development for its staff and County residents. On the influence of skills on the adoption of ICT in Murang'a County Government, most of the respondents agreed that people who were skilled adopted ICT at a faster rate than those who did not have skills. Similar views regarding the Murang'a County government not doing enough in skills development of

its staff and residents were also noted. From the findings on table 4.14 above, majority of the respondents agreed that ICT knowledge gaps among the employees hinder seamless adoption of ICT in service delivery.

5.2.2 Attitudes and ICT in County Governments

The researcher wanted to know the influence of different attitudes among different residents on adoption of ICT in service delivery as they vary. From the findings, majority of the respondents disagreed that attitudes influence adoption of ICT in the County with only a smaller percentage agreeing that attitudes had influence on the adoption of ICT. The researcher sought to know the influence of different beliefs among different residents on adoption of ICT in service delivery in Murang'a County. From the findings, majority of the respondents strongly disagreed that beliefs influence adoption of ICT in the Murang'a County, while a very small percentage agreed that certain ICT related beliefs influenced adoption of ICT on service delivery. From the study, it can be concluded that beliefs do not play a major negative role in adoption of ICT in service delivery in Murang'a County. The researcher wanted to know the influence of different culture among different residents on adoption of ICT in service delivery in Murang'a County. The findings on the influence of culture on adoption of ICT were like the findings on the influence of beliefs on the adoption of ICT within Murang'a County Government. Most of the respondents strongly disagreed that culture influence ICT adoption in the Murang'a County. The researcher wanted to know how corruption influence adoption of ICT in service delivery in Murang'a County Government. From the findings, majority of the respondents strongly agreed, that corruption negatively affects ICT adoption in service delivery within the County Government of Murang'a.

5.2.3 Financial Implications and ICT in County Governments

The study sought to know the extent to which financial implications have influence on adoption of ICT in service delivery. As per the findings on the impact of financial implications on adoption of ICT in the Muranga County government, respondents' majority strongly agreed that financial had influence on adoption of ICT in service delivery in Murang'a County. On the statements on how the cost of ICT expertise personnel influence adoption of ICT in Murang'a County government, majority of the respondents agreed that ICT expertise costs influence ICT adoption on service delivery. Most of the respondents viewed that it is important for the County government of Murang'a to hire ICT experts to transfer knowledge and training to the staff and residents of Murang'a County.

The study sought to investigate how the cost of hardware and software influence adoption of ICT in Murang'a County government. Hardware/software costs included purchase, maintenance and upgrades of the same. From the analyzed responses, majority strongly agreed that Hardware/software costs influence ICT adoption on service delivery. Some of the expensive ICT hardware and software may not be easily accessible and therefore may hinder adoption of ICT in service delivery within Murang'a County Government. The costs of transactions were another aspect that the researcher queried the respondents on. Muranga County in service delivery do not drag on one side thus it does not have drastic influence as the responses were evenly distributed.

5.2.4 ICT Infrastructure in County Governments

The researcher sought to find out the influence of ICT infrastructure on the adoption of ICT in service delivery in Murang'a County Government, it was noted that majority of those who responded agreed of ICT infrastructure positively influences adoption of ICT in Muranga County government. On statements regarding availability of ICT gadgets influencing adoption of ICT in service delivery in Murang'a County Governments, the respondents were not pulled to either side with half agreeing with the statements and the other half disagreeing with the statements. Some respondents asserted that availability of gadgets is not only the responsibility of the County government but also residents too should be involved.

On fiber optics connectivity, majority of the respondents strongly agreed that fiber technology has highly boosted adoption of ICT in service delivery in the County. Many of the respondents testified to access some Murang'a County Government services from their hand phone appliances and from their home computers. majority of the respondents further strongly agreed that network connectivity infrastructure influences adoption of ICT in Murang'a country as far as service delivery is concerned to a great extent,

5.3 Conclusion

Murang'a County Government has employed various technological solutions towards better service delivery to its residents. The residents of Murang'a County however feel more needs to be done for better adoption of ICT in serving residents. On the aspect of staff expertise and its influence towards adoption of ICT in service delivery, majority of the respondents felt that the County government needs to do more in terms of developing staff expertise since most felt more ICT experts would increase the speed of adoption of ICT in service delivery.

Resistance to change and its influence on the adoption of ICT on service delivery did not come out as a major hindrance to the adoption of ICT on service delivery. However, there is a small percentage of the respondents that felt issues like attitudes, beliefs and cultural orientation has an influence on the adoption of ICT on service delivery.

Financial implications and its influence on adoption of ICT on service delivery received strong sensitizations from the respondents. Most of the respondents felt issues like affordability of computer hardware and software prevents residents of the County to fully adopt ICT. The cost of transactions was also seen as a major factor that influences adoption of ICT on service delivery. When mobile money and online transactions have high charges, most people in the County prefer paying for services using cash, this reduces the number of people using ICT in service delivery.

Availability of ICT infrastructure was felt to play a major role in influencing adoption of ICT in service delivery in the County government of Murang'a. Availability of ICT gadgets like computers and servers makes it easy for residents to access information hence more adoption of ICT in service delivery. Apart from the availability of gadgets, networking connectivity and specifically fiber optics connectivity makes it easier for members of the County to access information online. With the County transferring most of its manual operations to online, better connectivity will enable more residents to easily access information online.

5.4 Recommendations for Policy, Practice and Scholars

From the research findings on statements relating to staff expertise and their influence on adoption of ICT on service delivery, younger members of staff had more interest in adopting ICT than the older staff employed by the County government. Younger staff also came out as more knowledgeable on ICT matters than the older members of staff. Based on the objectives, the study recommends that Murang'a County government should invest more money in training and development of both its staff and residents. To further increase the adoption of ICT in service delivery, the study further recommends that Murang'a County Government should identify champions who will sensitize the rest of the County staff and residents on the benefits of ICT.

The study found out that the different people have different attitudes towards adoption and use of ICT in service delivery among Muranga County Government. Demographically, the elderly people in the County came out as more conservative and were not willing to try out ICT technologies as compared to their younger counterparts. A number of the elderly members of the County believed that ICT can

be used by thieves and hackers to exploit them since they were not very conversant. The study recommends that Murang'a County Government should invest in sensitization of the residents on the benefits of ICT in service delivery. Further, the sensitization should focus more on the older generation since they are the most resistant to adopting ICT. Although it represents a smaller percentage of the County population, cultural factors and beliefs too should be demystified by the County government through public sensitization.

The study found out that high costs of ICT equipment and transactions play a role in the adoption of ICT in service delivery within Murang'a County Government. Residents of the County who are unemployed and small-scale farmers asserted that most ICT gadgets are unaffordable to them. Without access to ICT equipment's, a big part of the population is not able to adopt ICT in service delivery. The study recommends that Murang'a County government can invest more on open spaces where they can provide ICT gadgets and network connectivity for residents of the County to go and interact with ICT. This will in turn drive up adoption of ICT on service delivery.

High cost of transactions came out as a hindrance to adoption of ICT on service delivery in Murang'a County government. The study recommends that the County should lower transactional charges incurred by residents when paying for government services like permits, licenses and fines. Further, the County can collectively engage service providers like banks and mobile technological companies and bargain for better rates for its residents. Such initiatives of lowering transactional costs will encourage more people to utilize ICT in accessing government service.

On statements relating to the availability of ICT infrastructure like computing devices and networking infrastructure, the respondents shared that lack of access to ICT infrastructure hinders them from utilizing ICT in service delivery. Most of the respondents of Murang'a County who live far from the town centers specifically highlighted lack of reliable network as the main hindrance to access of government services. From the findings, the study recommends that Murang'a County Government should invest more on provision of ICT infrastructure for the residents. Further, Murang'a County Government should invest in fiber optics connectivity in the entire County to ensure accessibility of ICT services covering wider region in the County. The County can also partner with connectivity services providers to install network boosters within the County to increase internet speeds in the County.

5.5 Suggestions for Further Research

The focus of the study was on factors influencing adoption of ICT in service delivery within Murang'a County Government. The study was therefore limited in scope and it would be interesting to do a survey study on the factors influencing adoption of ICT in other County governments. Kenya being a developing economy, the nationwide availability of ICT infrastructure might be a limiting aspect. Therefore, it would be good to carry out the research in other developed economies on the factors influencing adoption and usage of ICT in service delivery. The study further recommends a study on the impact of ICT adoption on service delivery within the County. This will cover a gap in knowledge on how much ICT has transformed the livelihoods of the County residents.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

JONAH WAGUNYA

PO BOX 105-1020

MURANG'A

0780-800684

Dear respondent,

Re: Collection of research data

I student at the University of Nairobi, ODEL department undertaking my masters of arts in project planning and management. In order to fulfill the degree requirement, I am undertaking a research project on the influence of ICT adoption on service delivery in Kenya County Governments, a case of Murang'a County government. You have been selected to form part of this study. This is kindly to request you assist me collect the data by filling out the questionnaire, which I will collect from your premises.

The information you provide will be used exclusively for academic purposes. My supervisor and I assure you that the information will be treated with strict confidentiality. Feel free to call the number above on anything

Thank you in advance for your cooperation

Yours faithfully

Jonah Wagunya

MA - Project Planning and Management Student

University of Nairobi

APPENDIX II: QUESTIONNAIRE

Disclaimer,

This questionnaire is a survey to collect information on the influence of ICT adoption on service delivery at Kenya County government.

Kindly fill in all the blank spaces provided and tick/circle appropriate

Date:

SECTION A: DEMOGRAPHIC INFORMATION

1. Gender

Male [] Female []

2. Kindly indicate your Age

a) Below 25 years []

b) Between 25 -34 years []

c) Between 35- 44 Years []

d) Between 45 – 54 Years []

e) Above 55 years []

3. Are you an employee of Murang'a County?

Yes [] No []

If yes, please specify department.....

a) Agriculture and fisheries []

b) Education and youth []

c) Public service []

d) Finance and information technology []

e) Energy and transport []

f) Health servicers []

g) Environment and climate change []

h) Land planning and housing []

i) Water and irrigation []

If no, please specify your occupation?

4. What is your work position within the County (title)?

.....

5. Please indicate the highest level of education attained? (Tick as applicable)

- a) Primary []
- b) Secondary []
- c) Tertiary []
- d) Others (specify).....

6. For how long have you worked or lived within Murang'a County?

(Tick as applicable)

- a) 0 - 5 yrs []
- b) 6 - 10 yrs []
- c) 11 - 15 yrs []
- d) 15 yrs and above []

SECTION B: STAFF EXPERTISE

Using a likert scale of 1-5 where 1 = strongly disagree, 2 = disagree, 3 = Moderate, 4 = Agree, 5 = strongly agree, indicate the extent to which the following staff expertise affects adoption of ICT in service delivery at Murang'a County government.

Staff Expertise	1 Strongly Disagreed	2 Disagreed	3 Moderate	4 Agree	5 Strongly Agree
Staff expertise play a role in adoption of ICT in service delivery in county governments					
Training and developments enhance ICT in service delivery in county governments					
ICT skills set enhance ICT adoption in service delivery in county					

8. In your opinion, how does staff expertise affect adoption of ICT in service delivery at Murang'a County?

.....
.....

9. In your opinion, how can skill set of employees affect adoption of ICT in service delivery at Murang'a County?

.....
.....

10. Does lack of ICT skilled employees hinder adoption of ICT in service delivery within Murang'a County?

Yes [] No []

If yes, please specify.....

11. How can staff expertise be improved in the County?

.....
.....

SECTION C: ATTITUDES

Attitude	1 Strongly Disagreed	2 Disagreed	3 Moderate	4 Agree	5 Strongly Agree
Attitudes enhance ICT adoption in service delivery in county governments					
Beliefs in people influence ICT adoption in service delivery in county governments					
Culture influence adoption of ICT in service delivery in county governments					
Corruption enhance ICT adoption in service delivery in county governments					

12. In your opinion, how does beliefs affect adoption of ICT in service delivery at Murang’a County?

.....

13. In your opinion, how does culture towards change affect adoption of ICT in service delivery at Murang’a County?

.....

14. Do you think that corruption has been a hindrance to adoption of ICT in service delivery at Murang'a County?

Yes [] No []

If yes, please explain.....

SECTION D: FINANCIAL IMPLICATIONS

FINANCIAL IMPLICATIONS	1 Strongly Disagreed	2 Disagreed	3 Moderate	4 Agree	5 Strongly Agree
Financials play a key role in adoption of ICT in service delivery in county governments					
ICT expertise cost enhance ICT adoption in service delivery in county governments					
Hardware / software cost enhance ICT adoption in service delivery in county governments					
Transaction cost influence ICT in service delivery in counties					

15. Does the cost of software's affect adoption of ICT in service delivery in Murang'a County?

Yes [] No []

If yes, please specify.....

16. In your opinion, how does cost of ICT infrastructure affect adoption of ICT in service delivery in Murang'a County?

17. Do you think the cost of ICT related transactions influence adoption of ICT in service delivery in Murang'a County?
 Yes [] No []
 If yes, please specify.....

SECTION E: ICT INFRASTRUCTURE

ICT Infrastructure	1 Strongly Disagreed	2 Disagreed	3 Moderate	4 Agree	5 Strongly Agree
ICT infrastructure play a role in ICT adoption in service delivery in county governments					
ICT gadgets influence ICT implementation in service delivery in county governments					
Influence of fibre technology promote					

ICT in service delivery					
Networking equipments and connectivity promote ICT adoption in service delivery in county governments					

18. In your opinion, what is the influence of availability of ICT gadgets on adoption of ICT in service delivery in Murang'a County?

.....

19. Do you think the speed of transactions affects adoption of ICT in service delivery in Murang'a County?

Yes [] No []

If yes, please specify.....

.....

SECTION F: SERVICE DELIVERY

Service Delivery	1 Strongly Disagreed	2 Disagreed	3 Moderate	4 Agree	5 Strongly Agree
ICT implementation boost service delivery in county governments					
ICT platform has facilitated county customers to access information					

Murang'a County ensure network connectivity to its customers					
Murang'a County government ensure access to basic services like health, water, licensing to its customers					

20. In your opinion, has the County of Murang'a fully utilized ICT in service delivery among its residents?

.....

21. Do you think the current adoption of ICT in service delivery in Murang'a County has enhanced service delivery?

Yes [] No []

If yes, please specify.....

22. As a resident of Murang'a County, Can you highlight some of the ICT technologies that the County can adopt to improve service delivery?

.....

APPENDIX III: SAMPLE TABLE


Table for Determining Sample Size from a Given Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.

S is sample size

APPENDIX IV: RESEARCH PERMIT

THIS IS TO CERTIFY THAT: **Permit No : NACOSTI/P/18/33578/25899**
MR. JONAH WAGUNYA **Date Of Issue : 8th October,2018**
of UNIVERSITY OF NAIROBI, 205-10200 **Fee Received :Ksh 1000**
MURANG'A,has been permitted to
conduct research in Muranga County
on the topic: INFLUENCE OF
INFORMATION COMMUNICATION
TECHNOLOGY ADOPTION ON SERVICE
DELIVERY IN COUNTY GOVERNMENTS IN
KENYA, A CASE OF MURANG'A COUNTY
GOVERNMENT
for the period ending:
8th October,2019
.....
Applicant's 
Signature **Director General**
National Commission for Science,
Technology & Innovation

