

**EFFECTS OF INFORMATION AND COMMUNICATION
TECHNOLOGY STRATEGIES ON SERVICE DELIVERY
IN NANDI COUNTY GOVERNMENT, KENYA**

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**A RESEACH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN
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DECLARATION

Declaration by the Candidate

I hereby declare that this research Project is my original work and has not been presented for a degree or any other award in any university or to any other examination body. No part of this research project should be reproduced without authority of the author or/and the University.

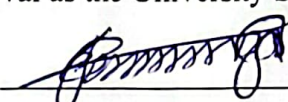
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DEDICATION

I dedicate this project to my wife; Rose Chesang Korir who has encouraged me all the way and whose encouragement have made sure that I give it all it takes to finish that which I have started. To my children Micheallearns (Learno), Emmanuel (Malelio) and Blessings (Bleble) who have been affected in every way possible by this quest. Thank you. My love for you all can never be quantified. God bless you.

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ABSTRACT

The ICT utilization has become a primary component in service delivery of many organizations and institutions. Many of these countries have been developing IT strategies to make sure that the services are accessible to all its citizens through links or applications. With this mind, the digitization of services to enhance service delivery has been one of the biggest challenges facing many governments. Public entities have embraced some of the ICT strategies but are rated low in service delivery this prompts answers to address this scenario. The main objective was to establish the effects of ICT strategies on service delivery in Nandi County Government, Kenya. The specific objectives were to investigate the effect of IFMIS implementation, to assess the effect of telecommuting, to determine the effect of cloud services and to investigate the effect of automation on service delivery in Nandi County Government, Kenya. The study adopted Schumpeter innovation theory, diffusion of innovation theory and system theory. The study adopted the descriptive and correlational research design where a target population of 129 employees comprising of ten departments which targeted the chief executive officers (CEOs), directors of the various departments under this ministries and support staff. The study employed census technique to obtain its study respondents. The primary data was collected using questionnaire, and results collected was analyzed using descriptive and inferential statistics. The final results were presented using frequency distribution tables and logical statements. The research found out that the IFMIS system, cloud computing, telecommuting and automation has enhanced service delivery activities in the County. Furthermore, revealing that there was a significant relationship between elements such as IFMIS implementation, cloud computing, telecommuting, automation and service delivery. The predictors (IFMIS implementation ($\beta_1 = 0.27$) cloud computing ($\beta_2 = 0.09$), telecommuting ($\beta_3 = 0.46$), automation ($\beta_4 = 0.45$) contributing to one it of public service delivery. The research is significant to the public entities embracing ICT in provision of their products and services. The study recommends to the policy makers in the government to make certain that ICT strategies form part of their decisions in enhancing service delivery.

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LIST OF ABBREVIATIONS AND ACRONYMS

CIS	Community Information System
EMIS	Education Management Information System
G2B	Government to Business
G2C	Government to Citizen
G2E	Government to Employee
G2G	Government to Government
HIS	Health Information System
ICT	Information and Communication Technology
IFMIS	Integrated Financial Management Information System
IPPD	Integrated Personnel Payroll Data
IT	Information Technology
LIAS	Land Information Analysis System
SPSS	Statistical Package for Social Sciences

OPERATIONAL DEFINATION OF TERMS

Automation	This is automated fingerprint, CCTV, lift and elevators and frisking technology that ensure logging in, security and performance (Smith, Noorman, & Martin, 2010).
Cloud Services	It involves storage, broad network access, networking and cloud computing (Pusp, Shareeful and Syed 2017).
ICT Strategies	These refer to IFMIS, telecommuting, cloud services and automation used to improve service delivery (Bhatnagar and Singh 2010).
IFMIS	This is a system that integrated financial process with procurement to ensure efficient accountability and transparent payment of suppliers and contractors. This ensures public financial management process, budget preparation, and financial reporting and procurement integration (Waweru and Ngaba 2019).
Service Delivery	This refers to ability of county government to provide quality, efficient, transparent and customer satisfaction (Bhatnagar and Singh 2010).
Telecommuting	It refers to teleworking, teleconferencing, online meeting and telephone and mobile service used in the organization (Allen, Golden, & Shockley 2015).

CHAPTER ONE:

INTRODUCTION

1.1 Background to the Study

The adoption of ICT related services globally, has been embraced by many governments to ensure that its citizens receive the required services that are needed in their day-to-day livelihood. Many of these countries have been developing information technology strategies to make sure that the services are accessible to all its citizens through links or applications. With this mind, the digitization of services to enhance service delivery has been one of the biggest challenges facing many governments. The same aspect has been seen being adopted by the private sector to make sure that the customer has been served or clients get the best experience while interacting with a system (Yator and Shale 2014). The development of ICT strategies to assist in the enhancement of service delivery has been the backbone of many of the services that are being offered by these governments (Bhatnagar and Singh 2010). Service delivery is the process where public servants provide services to its citizens, the services range from obtaining of licenses, official government documents, obtaining of permits among others.

The adoption of ICT strategies on service delivery among European countries has been found to be over 97%. In countries like Germany, France, Sweden among others most of its citizens utilize the available technologies i.e., application of government permits that include building, waste disposal among others, obtaining of government documents that include driving licenses, birth certificates, business licenses among others (Allen, Golden and Shockley, 2015). In Australia, the adoption of ICT services in the health sector has necessitated the usage of tools through what is refers to as M health in which the public obtains health related services by using their phones (ElMassah & Mohieldin, 2020).

In the Asian continent, countries like India and Sri Lanka have been able to try and adopt the implementation of ICT strategies in ensuring that they deliver the best services to its citizens. Other countries such as Japan and China have advanced technologies in their government operations which have aided effective service delivery. Despite the fact that the governments of these countries have put in place these services they face a myriad of challenges that include lack of sensitization to the public,

human resource capacity, corruption, slowness in the processing of the required services, poor customer care among other challenges (Mudalige & Shahzadah, 2020).

In Africa, many of the countries including Rwanda, South Africa and Kenya have been able to ensure that they develop the best service delivery for its citizens where they have been able to come up with good ICT strategies that have been used to provide the citizens with the required services that they need. In Rwanda for example, the government has digitized most of its services whereby most of the services are now done online. This includes the registration of businesses, issuance of business permits, processing of cases in the courts, making of payments to their government among other services. Uganda like Tanzania in East Africa has not advanced in the use of ICT compared to their counterpart Kenya. The same case as in Rwanda, South Africa is seen in Kenya, where majority of the government services have been put under one umbrella are referred to as the E- Citizen platform where the citizens can apply for the various services offered by the national government and make payments for the same (Odhiambo and Okello, 2019).

In Kenya, the government introduced the ICT strategies that were to be cascaded from the national government to the county government. At the national government level, the desire to ensure that the citizens accessed the relevant services it was prudent to introduce the Huduma centers which acted as the point at which the government would provide citizens with their services that were required. Ministry of Education introduced what was referred to as the national education management information system (NEMIS) which was tasked with the responsibility of ensuring that schools accounted for their students that they had and that parents would be able to follow up on the progress of their children. Among other ICT strategies employed by the Kenyan government include; the integrated financial management information system (IFMIS) which is responsible for the procurement processes within the government and ran by Ministry of Finance, have the national education management information system (NEMIS) under the Ministry of Education, Digi Farm under the Ministry of Agriculture among others.

1.1.1 Concept of Public Service Delivery

In many areas, organizations and institutions' service delivery plays a critical role that portrays how the organization or institution values its customers or clients. In government setting the public are clients, consumer, customer and citizens. Service delivery can therefore be defined as the process of providing services to citizens through channels that make it easy and accessible to them at any given time. One developing service delivery system there is the need of understanding the kind of service that one need to offer and how those involved which include the human resource contribute to the entire process of delivering this service (Omar, 2019).

The culture of service delivery has a different component that revolves around the qualities of the leadership, the habits of the human resource, their norms, values of the organization and its mission. It is therefore prudent that many of the government organization develop a culture that is service oriented which is used as the blueprint in guiding them on how to deliver these services. The study can therefore attribute that when we have a culture of delivering services that is superior it affects the overall performance of the organization. For service delivery to be efficient and effective the role played by its human resource function is critical as they are the first point of contact between the customers under the organization. They determine whether the customer will use the service again or not (Day, 2013). The repeat behavior defines the nature of service delivery is being offered by a particular entity. The more chances that the customer would come back for the service this can be described that the service delivery has improved or enhanced.

To ensure that their service delivery is of high quality, the strategies employed are required to be of high standards, the processes involved need to be clearly outlined under the structures of management. To ensure that these models are working there are several models that can be used and one of them is there SERVQUAL which encompasses five components that include responsiveness, empathy, tangibility, reliability and assurance. While utilizing this model, many of the government ministries and departments can utilize this data in measuring and managing the quality of service they provide to the citizens (Global, 2013).

The main aim of service delivery is to ensure that customers are satisfied by the services that an organization or institution provides. According to Maina & Kwasira (2015), citizens of a country view this state as an organization in which they are shareholders. The provision of quality services especially public services are the methods in which the government uses to meet its expectations or obligations to their citizens through delivering of the required services. It is therefore the role of the public service to ensure that the services that they are offering are available to their masses, accessible, acceptable and are affordable as they strive to meet the expectation of its citizens. The government at both the national and county level has the obligations of delivering exemplary services to those under their jurisdiction so as to remain credible (Maina & Kwasira, 2015).

According to Agu, Barker & Kandampully (2017) the government has the role of providing quality services to each citizen. Although it has various challenges that include availability of financial resources and qualified human resource personnel, the delivery of quality service has been affected. Service delivery in organizations is a strategic decision that propels performance. Several authors have defined service delivery, Pusp, Shareeful and Syed, (2017) define it as the process of providing effective and efficient services that meets the customer needs. Onyango (2015) defines public service delivery as provisions of services that meet customer needs. On the other hand, Rădulescu and Radu (2017) describe public service delivery as the means of providing quality services that meet the required standards. From the definitions it's imperative that public service delivery entails methods and processes which provides services that exceeds the current expectations of the public clients.

In recent times the public service delivery has significantly been linked with the use of technology in operations. For example, as cited by Onserio and Muturi, (2019). Service delivery in government involves improving the efficiency and effectiveness. The government has utilized ICT strategies such as e-health services, e-procurement, e-tax and other electronic services in public service delivery. These ICT strategies are preempted to provide, quality of work done, efficiency of work done, quantity of work done, and transparency during the work. Technology has been one of the ingredients that has aided the service delivery in entities.

Public service delivery is measured through effectiveness in service delivery, quality work done, the productivity of employees based on quantities of work done and reliability of an employee (Onyango, 2015). This is reflected in the quality-of-service provision in terms of timeliness, quality, quantity and transparency. The timeliness and accuracy in which the service can be accessed describe the suitability of the ICT to offer service delivery in organizations. Otieno, Migoro and Mutambara (2017) state that it is important to focus on transparency and efficiency while using ICT systems to ensure citizens are satisfied. Since the system should ensure that there is accountability and transparency in payment as well as timeliness to suppliers and contractors

1.1.2. Information and Communication Technology Strategies

Strategic decisions are important in organizations; several authors therefore have sought to explain the concept of ICT strategies. Onserio and Muturi, (2019) noted that Information and communication strategies have assisted the County Government in the provision of service through digitizing government programmes. IFMIS, telecommuting, cloud computing and automation, are some of the information and communication technology strategies that are geared toward improving service provision. Waweru and Ngaba (2019) pointed out that Integrated Financial Management Information System was developed to enhance access to the budgeting process, public finance management, access accounts and ease procurement processes. Besides the adoption of Integrated Financial Management Information System (IFMIS), e-service through cloud and telecommuting capabilities of information and communication technology has enabled improvement in quality, efficiency and transparency of service delivery.

Yator and Shale (2014) pointed the role of ICT in public service delivery through e-service enables efficient and effective quality service. This has encouraged massive automation in the government mainly in payment, security and procurement making work easy for employees. In regards to this, information and communication strategies that are applied in the public sector include Integrated Financial Management Information System (IFMIS), telecommuting, cloud computing and automation which remain crucial in the enhancement of financial management, budgeting process, transparency, efficiency at work, improve employee productivity and quality service delivery.

Digitization through using IFMIS enables the government to make financial management efficient and transparent. IFMIS integrate procurement, budgeting and financial process in one platform using information communication and technology (Otieno, Migoro, & Mutambara, 2017). This ensures the reduction of transaction cost, transparency of payment to contractors and suppliers, and provide financial trail and reports. Waweru and Ngaba (2019) added that, governments can conduct variations in budgets as well as provide financial reports that ensure transparency in the public sector. This studies show that several functions of the government can be performed in a well designed and developed ICT platforms.

Therefore, IFMIS remains an important ICT tool that is adopted in the County government, if applied well should enhance transparency and accountability in government to government as well as government to citizen procurement and financial management. Development and adoption of IFMIS, as cited by Waweru et al (2019) was viewed as a cornerstone in ensuring that the public service delivery of various products and services increases exponentially. Since its adoption, despite its challenges the government functions have been performed with minimized errors or difficulty.

Telecommuting according to Allen, Golden, & Shockley (2015) is a work practice whereby employees substitute part or all working hours from office to field, home, client site or use information technology to communicate from remote areas. Telecommuting is increasingly adopted in various government agencies where telecommunication is utilized to telework, communicate, and conduct teleconferences and tele-meetings. There is a continuous need to embrace telecommuting and improve employee service provision to the public. Uchenna, Uruakpa and Uche (2018) pointed out that using telecommuting where employees were able to work with the right telecommunication infrastructure enhanced the quality and speed of work. In this regard, there should be a plan to adopt telecommuting by the county to enhance the efficiency of their employees.

Cloud computing is increasingly been adopted as an ICT platform that ensures resource pooling, storage and service on demand (Rădulescu & Radu, 2017). According to Pusp, Shareeful and Syed, (2017), cloud computing assists the government links and provides a solution which reduces the time for projects. This enables the government to conduct government to government transaction as well as with other stakeholders. Abell, Husar

and May-Ann (2021) pointed out that cloud computing in the high of emerging issues played an important role in enabling e-government services, boosting the agility of government, improving public sector resilience and recovery capability as well as ensuring public sector human resource adoption of technology.

Automation systems are crucial in reducing manual logging in, billing and e-government processes (Smith, Noorman, & Martin, 2010). Fingerprint analysis technologies are one of the automation technologies that is used in security, logging in and access to information. Automation systems have a significant influence on service delivery according to Odhiambo and Okello (2019) which assisted the government through application programs used and control systems within the organization. Kenya has a nation introduced Huduma center that adapted integrated system through ICT infrastructure as well as automation capability which assist in running the government programs. This has improved access to service not only through the centers but also on the online platform (ibid). Automation in county government has been applied in security and revenue collection to improve employee efficiency and effectiveness.

1.1.3. Nandi County Government

The promulgation of the Kenyan constitution in 2010 led to regional governments and devolved functions at county levels. This was aimed at devolving and making the delivery of services near to the citizens. ICT was one of the functions that were devolved to the county levels. Nandi County, as a devolved government aimed at providing services to the residents of the county. Nandi County under County Integrated Development Plan (CIDP) identified ICT as one of the enablers of service delivery. Therefore, the department of ICT developed integrative frameworks for all its departmental functions and activities.

The Nandi County government in the year 2018 developed and implemented the citizen service charter as part of the County Integrated Development Plan (CIDP) 2018-2022. This entailed embracing methods and technologies that would improve the quality of services commensurate with client's expectations. In 2020 the Nandi County's ICT and e-government focused on transforming its activities by automating the service delivery in all its departments. Some of the ICT automated processes included; data center, health management information system, fleet management, Digi Farm, and County Digital Literacy Program. This has led to an effective e-Government

organizational structure resulting to smooth operations, reduction in conflicts and enhanced innovation in its units. Furthermore, it has brought governance closer to the people.

1.2 Statement of the Problem

Service delivery decisions are critical in organizations that provide services and products to the customers. Abell, Husar and May-Ann (2021) states that service delivery contributes to general performance of organization. Liberation and privatization of the market in Kenya, led to competition between public and private sectors in provision of quality of services (Pusp, Shareeful and Syed, 2017). ICT is observed as one of the impetuses to better service delivery in business organizations. Onyango (2015) states that many organizations strategic decisions involve implementation of ICT to enhance service delivery.

A number of related studies have been conducted providing methodological and contextual gaps. A descriptive study in South Africa by Ntetha & Mostert (2011) indicated that ICT tools were available with trained staff; however, the ICT infrastructure is not utilized well for service delivery, effectiveness and quality service delivery from the County government. The design employed by the study is different from that of the current study. Another study conducted by Onserio and Muturi (2019) on the influence of e-government strategy on service delivery in devolved units in Kisii County. This study showed a contextual gap because it focused on e-government strategy while the current study focused on ICT strategies.

Information and communication technology are among the 2030 vision strategies that would ensure the creation of jobs and improvement of innovation in Kenya. This was to enhance government to citizen, government to the employee, government to government and government to business networking (Yator & Shale, 2014). ICT is very important in service delivery however, there are challenges based on ICT service delivery which relate to ICT implementation. The Nandi County Government ICT Roadmap 2015-2020 showed successes in data management, telecommunicating, and automation of services. However, in contrast, Nandi County is among the lowest county in the North Rift region in public service delivery as revealed by low performance in the county according to National performance report of 2021. There are complaints from the users in the county of delay in provision of essential services. Therefore, there

was a need to seek answers on how information and communication technology strategies do affect service delivery in Nandi County Government, Kenya.

1.3 Objectives of the Study

The study was guided by the following objectives;

1.3.1 General Objective

The general objective was to establish the effect of information and communication technology strategies on service delivery in Nandi County Government, Kenya.

1.3.2 Specific Objectives

The specific objectives were given as follows;

- i. To assess the effect of IFMIS implementation on service delivery in Nandi County Government, Kenya.
- ii. To assess the effect of telecommuting on service delivery in Nandi County Government, Kenya.
- iii. To determine the effect of cloud services on service delivery in Nandi County Government, Kenya.
- iv. To examine the effect of automation on service delivery in Nandi County Government, Kenya.

1.4 Research Hypothesis

The study research hypotheses were as follows;

- H₀₁: There is no significant relationship between IFMIS implementation and service delivery.
- H₀₂: There is no significant relationship between telecommuting and service delivery.
- H₀₃: There is no significant relationship between cloud services and service delivery.

H₀₄: There is no significant relationship between automation and service delivery.

1.5 Value of the Study

The study will be valuable to the following groups;

1.5.1 The County Governments.

The findings of the study are hoped to provide insightful knowledge for those in practice and operations. The study will be significant for the county government and its stakeholders in embracing ICT systems in improving transparency and accountability. The emergence of County government after the passing of constitution in 2013, there were expectation that they would provide effective governance platforms for resources. Findings for this study are expected to provide a positive contribution for them to enhance their public service delivery. It will assist in improving efficiency, effectiveness and quality service delivery not only in county government to the citizen but also government to businesses, government and employees.

1.5.2 Policymakers and the Legislation

The findings are expected to provide empirical and factual knowledge that will be used for policy making frameworks. Policy is critical in running of every institution; this means that expert in the ICT sections would find the findings useful in ensuring that their respective procedures and operations are effective and competitive. This will also assist policymakers in ICT related functions in developing efficient legislation that will improve service delivery in government. National and local governments in Kenya are expected to embrace E-government through the use of ICT which would ensure that all service delivery is done inefficiently and transparently.

1.5.3 Scholars and Researchers

The findings to this study will be of great help to scholars and future researchers. The future researchers will use the empirical findings in building up a case for further research. They will be able to identify research gaps that their future studies will seek to fill. Scholars will find relevant secondary data in areas of ICT and public service delivery which they can use to enrich their academic studies. This will be found in the

University repository and library sections. Additionally, the publishing of the research findings would increase accessibility to the international readers or learners.

1.6 Scope of the Study

The scope of the study was within Nandi County with keen interest on the county government of Nandi. The study focused on how information and communication technology strategies, have affected service delivery. There are a number of ICT elements but the study was limited to only four areas or elements. The areas that were studied include implementation of IFMIS, telecommuting, cloud services, and automation. The study targeted all the 10 ministries in the county drawing a target population of 129 participants which represented a sample size of 98 participants who are employees of the county government. The scope covered the implementation of ICT strategies between the years 2018 to 2021. The study took three months that involved collection of data and its analysis to presentation.

The study was done within Nandi County Government which focused on information and communication technology strategies and service delivery. The county was chosen to justify the problem advanced by the study. The study targeted employees at different levels of management from the 10 county ministries. The levels include those engaged in planning, operations and supervisory functions. The study focused on telecommuting, IFMIS implementation, cloud services and automation within the period 2017 to 2021 in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section consists of theoretical, conceptual and empirical review which is used to get knowledge gaps. The study also used the existing information to develop a conceptual framework.

2.2 Theoretical Review

Three theories guiding the study include; Schumpeter theory of innovation, diffusion of innovation theory, and system theory. Kawulich, (2016) defines a theory as a

principal or bodies of principal that are used to explain phenomenon. The main purpose of our theories is to predict future events of observations or occurrences that are verified through experimental analysis and empirical observations.

2.2.1 Schumpeter Theory of Innovation

The study will be anchored by the Schumpeter Theory of innovation propounded by Joseph Schumpeter in 1911. Emergence of this theory believed to be a beginning point for modern growth theory whose basis is innovation and a by-product of the development process. According to Schumpeter (1939), the innovation process that is currently being used easy driven by economies of different countries. He further argues that the theory explains why there are changes that are continuous in the global markets and economies. Pramuki & Kusumawati (2020) support this argument by stating that the adoption of various strategies within the various economies depends on the services that organizations within the countries adopt. The theory as propounded looks at the introduction of new technologies and concepts, in which the introduction of cloud – based services, automation of tasks is considered as new innovations within the county governments which are the third and fourth objectives of the study.

This theory is applicable in the current study because it introduces the use of e-marketing, e-service, e-governance, e-management and e-commerce. According to Allen, Golden and Shockley (2015) new product development is equated to innovating a new idea. This is what the theory advocated for and advises to be done in organizations. In this theory, the responsibility lies in a public officer allocating resources available to the most necessary and trying different combinations to be able to know which brings about service delivery. According to Karol (2013) any person who strives to bring change is a transformational leader. Therefore, change in using innovative strategies in technology can be viewed as transformative in providing the required service delivery.

This theory faced criticism on its inability to associate with the changes in environmental forces and its impacts to the organizations. The current study, adoption of ICT strategies is an innovation that has been fostered by the various departments within the government and county governments to ensure that they provide the required services to the citizens on a timely manner using resources that are available. The

implementation of IFMIS systems, cloud services, telecommuting and automation of services can be categorized as some of the innovations that are being adopted by governments either at the national level or county

2.2.2 Diffusion of Innovation Theory

The theory on diffusion of innovation was propounded by Everett Rogers in 1962. In his arguments he stated that diffusion was the process in which innovations were communicated within a specified period of time two individuals that were within a specified social system. The following proponents was found to be the influencers off new ideas; channels used in communication, the innovation itself, the amount of period taken in communicating and the system in which is socially available and depends entirely on human resource. For this to be achieved the innovations need to be incorporated in all aspects of the organization and they need to be sustainable in the long run. As cited by Lynn and Keith (2001), division of innovation may as well be defined as the innovations pertaining to technology, the data used by people within a specified group within the society.

In the spirit of the study, the theory explains the importance of integrating innovations and the ideas that bring about the innovations in their day-to-day operations of any organization. It is therefore accurate to state that organizations need to develop ideas and ensure that, these ideas and innovations that they develop can be casketed in all levels of management or departments, to ensure that those providing their services to the clients understand how these innovations work and how they contribute to better workmanship and service delivery.

The promotion of innovation can be seen through the adoption of ICT strategies by the county government to ensure they provide the requisite levels of service to the citizens that rely on them. The study expects that once the new ICT technologies are developed the expectations is that it will be advanced or adapted across various sections or units within the organization. The adoption of systems like IFMIS, cloud services, telecommuting and automation of services are some of the innovations that need to be utilized to their full capacity to assist on the improvement of service delivery within the county governments as well as other departments in the national government (Abeywickrama and Rosca, 2015).

2.2.3 System Theory

Systems theory was propounded by Ludwig von Bertalanffy in 1969. According to Bertalanffy (1969), defined organizations are set off interconnected and inter-reliant parts that work together to achieve a common purpose. This theory focused on organizations of the systems that were open which transformed raw materials into finished products. The theory tried to explain why organization in general interacted with the environment in order to attain equilibrium. It is therefore worth noting that for a system to work it means to have other systems that are smaller so as to ensure that whatever the system was intended for is achieved. For organizations to realize their objectives and achieve them it is important for them to work in synergy whereby all departments work together for the common goal of the organization and ensure that all the activities and processes that the organization follows are up to date and they lead towards the realization of the same goals (Allen, Golden and Shockley, 2015).

The public functions and activities represent a general system which is the same as scientific model approach of system theory. Onserio and Muturi (2019) noted that the characterization of our system was done via its input and the processes used to ensure that it provided the desired output. They acknowledged the presence of subsystems that made-up the larger system to assist in the realization of the purpose for which the system was developed. The adoption of ICT technologies and the strategies used to ensure that these technologies are adopted are part of an entire system that is composed of human resource who understand how to use these systems to provide the required services to their citizens who are also part of the system.

It is evident that if the people are not there who are the citizens to use the systems in place, then the entire purpose of why the systems were needed in the first place becomes invalid. This is still through the adoption of IFMIS to manage the procurement and payment process of government services and products, the adoption of cloud services to assist in the flow of data and information between various departments, telecommuting and automation of services. If these systems are not utilized fully, they may not be able to fulfill the end purpose hence giving poor service delivery to the intended individuals or persons.

2.3 Measurement of Public Service Delivery

The county government in Kenya was developed to devolve service delivery to the citizen. Onserio & Muturi (2019) state that service delivery is related to efficiency, effectiveness, quality, customer satisfaction, transparency, grievances redress and reliability. Many organizations especially have developed systems or procedures that they expect would measure their performance as they deliver services to their clients. According to Odhiambo and Okello (2019) used service leads, service reputation and customer satisfaction were used to measure service delivery in Huduma Centers. The service delivery was related to an automation system where application programs and control systems are used. Hence, customer satisfaction remains appropriate in measuring automation in government-based services since service lead and reputation might not work with non-systemic automation.

The efficiency of public service delivery by Alahakoon and Shahzadah (2020) was used to examine ICT deployment. Similar, Otieno, Migoro and Mutambara (2017) pointed out that IFMIS must be able to ensure that there is efficiency as well as transparency in the payment of suppliers and contractors. The system would allow the county government to conduct a comparative analysis of the market rate which reduces the price and cost of projects as well as make timely payments which increases efficiency.

2.4 Empirical Review

An empirical review of studies was presented on IFMIS, telecommuting, cloud computing and automation concerning service delivery. These reviews were presented as follows;

2.4.1 IFMIS Implementation and Service Delivery

Several studies have sought to link the association of IFMIS implementation on service delivery. The study by Otieno, Migiro and Mutambara (2017) conceptualized the Integrated Financial Management Information System for Migori County. The study conducted a theoretical review of the Work Around Theory, Innovation Diffusion Theory and Technology Acceptance Model of the IFMIS conceptual framework. The key factor identified in IFMIS implementation was ethical behaviour, cultural, environmental, organizational and technical. The results indicated that this factor

enhanced transparency and efficiency in suppliers' and contractors' payments, reduced price based on the time value of money as well as enhanced market rate through comparative analysis across organizational units. The IFMIS integration in the county has made operations in the county to be competitive enough eliminating many errors and improving transparency. The study adopted primary data collected using questionnaires.

A study was conducted by Waweru and Ngaba (2019) which assessed the effectiveness of IFMIS in selected government ministries in Kenya. Information technology systems are increasingly used to enhance efficiency and effectiveness in service delivery. IFMIS is designed to enhance information management, tracking and recording of financial data. Hence, the study examined the effect of IFMIS on accounting transactions, procurement process, production of financial records and budget process. Cost reduction theory, theory of budget and technology acceptance model was adopted. The study reviewed literature and found that implementation of IFMIS had improved accounting transaction processes. Where transaction processes are done in real-time. The procurement process through IFMIS has been enhanced through quality products and services at the lowest cost creating value for money. Financial reports as well as budgeting process through real-time feedback on expenditure.

Another global study was conducted by Abell, Husar and May-Ann (2021) on the Integration of Artificial Intelligence (AI) on service delivery in some of the UK government financial functions. The aim of the study was to assess whether the AI would be able to identify the risks in advance before the actual losses would occur. Secondary data from the reports showed that the integration of AI has been effective in identifying financial risks before the actual losses. The study was purely qualitative in nature where secondary data from the government websites and records were purely reviewed.

2.4.2 Telecommuting and Service Delivery

The performance of employees was examined by Uchenna, Uruakpa and Uche (2018) based on telecommuting. This enables employees to work at home using telecommunication technology. The study used a survey research design where it was done in Owerri, Imo state. Spearman rank correlation coefficient and descriptive

statistics were used. The findings revealed working at home had a weak positive impact on the work quality. Since the arrangement allowed employees to choose the working location which significantly affected the speed of speedy service delivery. Hence, the study concluded that telecommuting had a significant effect on employees' performance.

A study by Uchenna, Uruakpa and Uche (2018) was conducted in Lagos, Nigeria. The objective of the study was to find out how telecommunication has enhanced public service delivery in the public sector. Quantitative findings from the survey instruments were used by the study, where top managers of selected public entities were used. The findings showed that many of the public entities have embraced the use of telecommunication in their respective sections or departments and this has improved performance of the organization. Communication of the employees had improved significantly in the organization.

A related study was conducted by Allen, Golden and Shockley (2015) which reviewed existing telecommuting articles for scientific evidence of findings and its implication. Telecommuting was found to affect firm-level metrics, organizational commitment, withdrawal behaviours, wages, performance, stress, job satisfaction, work outcomes, attitudes, work-family issues and employees' identification. Innovativeness and knowledge sharing and motive for telecommuting are among the interpersonal processes that should be considered while adopting telecommuting. The potential impact on social ties, work opportunities, business continuity emissions and traffic societal effects of telecommuting should also be considered.

In Ghana, Ansong and Boateng (2018) examined the organizational adoption of telecommuting. Despite, telecommuting had been growing in the past two decades but in Africa the adoption is slow. The aim of the study was to examine organizational, environmental and technological factors on telecommuting adoption in Ghana. Technology–organization–environment (TOE) framework was adopted as the guiding lens. The qualitative research approach was adopted from the critical realism perspective on the case of Ericsson in Ghana. The results indicated that telecommuting practices had benefits that assist the company and its staff. The technology-organization-environment framework was appropriate for developing economies.

Therefore, there is a need to settle policy discourse regarding the adoption of telecommuting in Ghana.

2.4.3 Cloud Services and Service Delivery

Cloud-based e-government was assessed by Pusp, Shareeful and Syed (2017) using the perspective of developing countries. Developing countries have been struggling with the adoption of e-government services based on insufficient e-government infrastructure. Other barriers to e-government besides lack of infrastructure are improper e-government service delivery channels and lack of payment gateways. The study examines the cloud-based government to government framework of e-government. The study used the case of Nepal where the cloud-based was used for e-government in the project. The result indicated that the G2G approach of e-government enables effective government services to developing countries' stakeholders. The current study will investigate the cloud with service delivery.

A study in Moldova was conducted by Abeywickrama and Rosca (2015) which investigated cloud computing value creation in public administration. Cloud computing is one of the techniques that information technology has integrated with transforming service delivery. A case study of Moldova's central public administration was investigated for the effect of cloud computing on service delivery. Seven areas of application of cloud computing that can enhance service delivery. Where accountability, transparency and faster service delivery were among the values. The study proposes a solution that public administration should adopt including the use of cloud computing in service delivery. The current study will adopt a descriptive research design.

A working paper by Abell, Husar and May-Ann (2021) examined cloud computing as an essential component in digital government in both Asia and the Pacific. Cloud computing was considered based on the impact of the coronavirus disease (COVID-19) pandemic which requires the adoption of digital tools and digital transformation of government services. Asia and Pacific governments adopted the arising pandemic through cloud computing technology through adoption of digital economic plans, e-government services and using augmenting their data analytic capability. The government would benefit from reducing the costs, boosting the agility of government,

improving public sector resilience and recovery capabilities as well as ensuring public sector human resource technology development. The study found that policymakers had challenges in the development of data security and protection policies. Other barriers were outdated cost structures and public procurement integration. Technical barriers were also found to affect based on lack of technical knowledge in the public sector. Hence, the study recommended the development of policies, conducive regulatory environment, a clear cloud strategic plan and in-house support. The current study established the relationship between cloud computing and service delivery.

A local study was conducted by Yator and Shale (2014) that sought to find out how ICT storage facilities have aided quality of services delivered in the organizations. The respondents of public entity were selected in the study. The inferential statistics showed that a positive relationship exists between the ICT storage facilities and the quality offered by the entity. According to the study the ICT storage facilities have aided to secure, reduced costs and improved accessibility of information stored thus improving quality of service delivery in the organizations. The study recommended that organizations should embrace new technologies to avoid situations that they adopt out dated ones in their operations.

2.4.4 Automation and Service Delivery

A Local study by Odhiambo and Okello (2019) investigated the effect of automation systems on service delivery. The study aimed at examining system performance reporting, cross-functional integration, knowledge management systems and automation systems on service delivery in the Huduma centre within Kenya. A sample of 192 was extracted from 1150 members of the public based on average daily visits and 153 Huduma Center personnel. Descriptive and inferential statistical methods were used on responded questionnaires. According to the findings, automation had a significant influence on service delivery. However, the study was done in Huduma centres rather than in county government leading to a contextual gap.

A study conducted by Onserio & Muturi (2019) on the Kenya public ministries. One of its objectives was to establish the effect of automation of performance of public ministries. The study surveyed 256 public officers from the various ministries and established that automation of services in the ministry has led to more productivity

hence performance. The, inferential statistics showed a positive significant relationship between automation and service delivery. The study established that many of the public entities differ on the type of automation to be used in the organization. Therefore, it means that applicability of a technology in one section might differ in its usage in another section.

A study conducted by Onserio and Muturi, (2019) set an objective to establish the challenges facing public entities automating their services. A number of respondents of County government of Kisii were selected and interviewed. The findings which were analyzed using content analysis showed that rigidity and bureaucracy were the main factors that have hindered the county to automate their services. Policies and formulation and passing of ICT bills in county assemblies have posed the difficulty of embracing appropriate technologies in the county. Difficulty in adopting automation has not aided the quality of services offered in the County according to the key informants of the study.

While undertaking their study on how system automation influenced service delivery at the Ministry of Public Service and gender which targeted 128 senior managers within the ministry translating to a sampling frame of 96 participants and using questionnaires as the main data collection tool Muthee & Mang'ana (2021) found that the automation of systems had a strong positive relation with how services were being delivered in the ministry. They also noted that automation of the systems required these systems to be user friendly so as to enable those who are using them to have limited difficulties while interacting with it.

Oduma & Shale, 2019 while conducting their study on how automation of logistics affected supply chain performance in Kenya medical supply authority and utilizing descriptive research design and a sample size of 96 participants who were directly involved in managing of operations within the logistics company. Questionnaires were used as the primary data collection tool. It was discovered that the automation of services and functions had contributed to reduction of workforce needed to ensure the operation of the organization are handled hence contributing to better service delivery due to shorter periods of time used to fetch products within the warehouses. With automation, it was noted that it assisted in placement of orders and processing which enabled KEMSA to improve on its service delivery.

A case study was conducted by Rădulescu and Radu (2017) in Romanian firms. The study sought to find out how use of automations has improved the performance of organizations. Data of the study were collected quantitatively and analyzed statistically. Findings revealed that automation had a positive influence on the performance of the organizations. Performance had improved with a higher % after automation processes and procedures in the organization. Therefore, organizations are faced with the obligations to embrace competitive automations in their operations to ensure that the service delivery and provision of products is enhanced.

In 2015 while conducting their study on how automation of business processes was effective through process engineering with public universities in Kenya being the unit of measurement, with the descriptive research design as the research method, while utilizing purposive stratified sampling and targeting 1367 participants from public universities – teaching staff, administrative staff and finally students- translating to a sample size of 257 and utilizing questionnaires and interview guides to collect data. From the finding it was noted that the automation of processes within public institutions had enabled their institutions to provide better services to its students which improved their service delivery. They found that there existed a strong relation between automation processes and provision of quality service delivery.

2.5 Conceptual Framework

The independent variable (Figure 2.1) entails IFMIS, telecommuting, cloud services and automation. IFMIS was measured using the indicators of public finance and procurement integration. Telecommunicating was measured according to tele wiring and tele conferencing while cloud services were measured using cloud computing and brand network access and networking. Automation was measured using automated security system and automated collection. The dependent variable (Figure 2.1) is public service delivery. The indicators of public service delivery among the employees include; quality, efficiency, quantity and transparency of work.

INDEPENDENT VARIABLE:

ICT STRATEGIES

DEPENDENT VARIABLE:

PUBLIC SERVICE DELIVERY

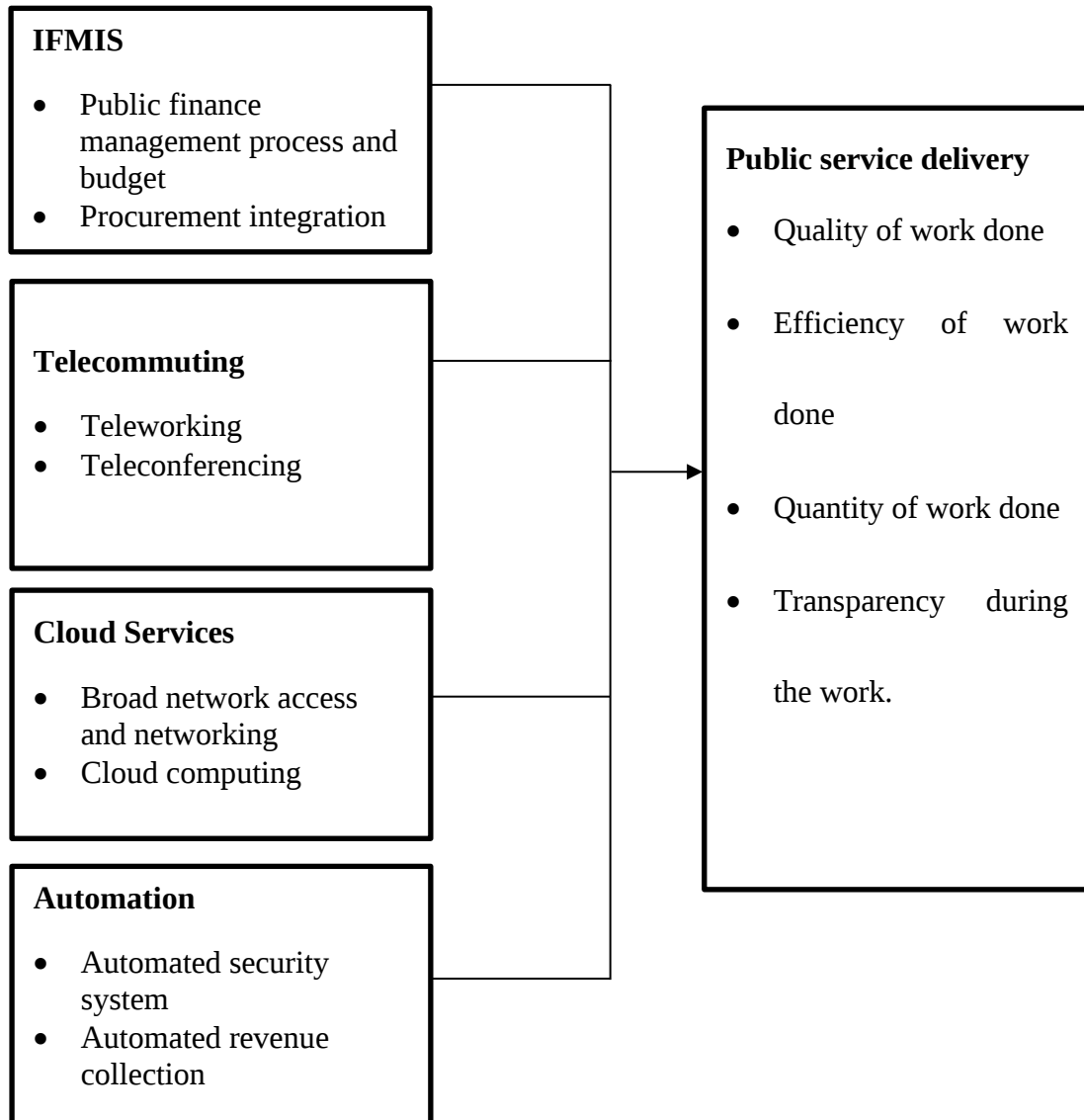


Figure 2.1: Conceptual Framework

Source: Author 2022

2.6. Summary of Previous Studies and Knowledge Gaps

The summary in Table 2.1 provides knowledge gaps of reviewed empirical studies in the literature review which were fulfilled by the current study.

Table 2.1 Research Gaps

Author	Focus	Findings	Research Gaps	Focus of Current Study
Odhiambo and Okello (2019)	Automation systems and service delivery	Automation systems had significant influence on service delivery in Huduma Centers.	Contextual gap since it was done in Huduma Centers and focused on automation.	The current study did focus on the Nandi County and looked at entire ICT strategies
Pusp, Shareeful and Syed (2017)	Cloud based e-government from the perspective of developing countries.	Cloud based government to government framework would contribute to improvement of service delivery between government and stakeholders.	Examined cloud-based e-government in developing Countries. It was a comparative study.	The current study did establish relation between e-government and service delivery. With cloud being a smaller component of the study
Abeywickrama & Rosca, (2015)	Cloud computing as value creation in Moldova central public administration.	The study proposed a framework for the public administration to used cloud computing as means of enhancing service delivery.	The study used a case study design of Moldova central public administration.	The study did utilize a different research design which was descriptive research design.
Abell, Husar and May-Ann (2021)	Cloud Computing as enabler for digital	Coronavirus disease pandemic indicated the need for using cloud computing as means of reducing cost	The study focused on cloud computing in	The current study didl examine cloud computing and service

	government in Asia and Pacific.	operation, boosting the agility of government, improve resilience and recovery as well as ensure public sector human resources.	adoption of digitization in government.	delivery as one of its study objectives or strategies.
Otieno, Migiro and Mutambara (2017)	IFMIS conceptual Framework for Migori County, Kenya.	Ethical behaviour, cultural, technical, environmental and organizational factors affected the transparency and efficiency in payment of contractors and suppliers, reduce prices and gain best market rates based on comparative analysis.	The study focused on examining IFMIS framework guided by theoretical review.	The current study did collect primary data to determine relationship between IFMIS and service delivery in one of its objectives.
Waweru and Ngaba (2019)	IFMIS effectiveness in selected government ministries in Kenya.	IFMIS have enhanced real time accounting process, improve procurement process that ensure quality and value for money, enhance budget process and preparation of financial records.	The study used documentary design where secondary data was collected.	The current study did employ a different research design which are correlational and descriptive study
Uchenna, Uruakpa and Uche (2018)	Telecommuting was investigated on performance of employees.	Telecommuting had positive significant effect on performance of employee where it influences the quality and speed of work.	Conception gap since public performance was investigated.	The study did focus on service delivery different from general public performance.

Allen, Golden and Shockley (2015)	Effectiveness of telecommuting.	Telecommuting was found to have effect on firm-level metrics, organizational commitment, withdrawal behaviors, wages, performance, stress, job satisfaction, work outcomes, attitudes, work-family issues and employees' identification.	The study was based on review of existing research.	The study did focus on telecommuting on service delivery as one of its study objectives.
Ansong and Boateng (2018)	Organizational adoption of telecommuting.	Telecommuting practices had benefits that assist the company and staff. The technology-organization-environment framework was appropriate for developing economies.	Qualitative research approach.	The study did use descriptive and correlational research design.

Source: Author (2021)

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

The chapter reviews the designs that was adopted by the study, the targeted population, the techniques used to sample the participants of this study and provide the sample size that was used for the study, it also provides the tools that were used to collect data, it also highlights the processes used to analyze the data that has been collected and provided us with the ethical issues that the study faced and how they were resolved.

3.2 Research Design

The research design provides the framework in which the study was anchored upon (Gray, 2014). The study adopted the descriptive and correlational research design. Gray (2014) states that descriptive design seeks to gather more information on a particular chosen subjects in the study. According to Kumar (2018) correlational research design seeks to establish association between variables. Correlational research design according to the author allows the cause effect to be employed. This design was appropriate because it seek to find the cause-effect relationship between ICT strategies and public service delivery. Similarly, the adoption of the two designs was necessary in allowing the research to employ different statistical measures to obtain the required results.

3.3. Target Population

(Zhao et al., 2013) define the target population groups of individuals or sets of items in which the study identifies and uses them in the study being conducted. These individuals or sets of items provide results that can be used to make a general conclusion about the larger population. The target population for this study was drawn from the 10 ministries that were within the Nandi County government and have implemented ICT strategies to enhance service delivery within the county. The target population comprised of the chief executive officers (CEOs), directors of the various departments under this ministries and support staff. The identified target population consists of individuals who were decision makers and also users at the same time. They both provided strategic and technical knowledge of the subject of the study. The County Chief Executive officers and directors are decision makers within the various departments and the ministries whereas the support staffs were those that interact with their systems and assist clients on a day-to-day basis. In table 3.1 it highlights the target population and the targeted number of individuals per group.

Table 3.1: Target Population

Target group	Target population
Chief executive officers (CEOs),	22
Directors of departments	25
Support staff	82
Total	129

Source: County public service board 2022

3.4. Sample Size and Sampling Techniques

Sample refers to the representation of a population that is procedurally selected to characterize the population upon scientifically taking the sample used to generalize the entire population. The study employed census technique to obtain its study respondents. Burns and Groove, (2001) defines census technique as a technique of sampling the entire target population of the study. In this case, 129 target populations formed part of the study respondents. Zamboni (2018) justifies the need to employ census as a technique of reducing the sampling error to zero.

3.6 Data Collection Instruments

Data was collected using questionnaires and interview guides. The choice of using the two instruments is important in obtaining comprehensive information that answers the objectives of the study. For the collection of secondary data interview guides was administered to the chief executive officers within the various ministries. This was to ensure that the interviewed staffs are given the open forum to provide detail information relevant to the study objectives. Questionnaire was issued to the respondents these included ICT support staff and directors. These respondents were given the questionnaire because they understand the technical applicability of the subject being investigated in the study. The questionnaire was structured to contain both open and close ended questions. The Linkert scale provided the level of measurement guided by the objectives of the study.

3.6.1 Pilot Study

Pilot testing is the process of finding out whether the research instruments will able to gather the required sets of information as per the specifications of the study. It also allows the researcher to know if the study participants have an understanding of the factors being researched on. The piloting of the research instruments was done in Uasin Gishu. The choice of using Uasin Gishu County was due to its implementation of a robust ICT strategy which was in comparison with those used in Nandi County. In the process of conducting a pilot study, 10% of the total number of the sample size was used. This was 10% of 129 of the respondents

is 13. Mugenda and Mugenda (2018) suggest that 10% of the sample is sufficient for piloting. The results from the pilot study were used to examine the validity and reliability of the instrument. The selected individuals were issued with their questionnaires and interview schedules were also conducted.

3.6.2 Validity of the Research Instrument

Validity of the instruments is important for systematic contextual, accuracy and logical premise for any study to be justifiable (Taherdoost, 2016). Validity of instruments used in conducting research can either be contextual or external. Under contextual validity the research instrument needs to be able to measure accurately the kind of information that the researcher needs for the study. In external validity this is where the research instrument is distributed to a specified number of samples which will generate results that can be generalized. The supervisor did aid in scrutinizing the content and construct of the items in the questionnaire. These results can be generalized from a small sample to the bigger population. To ensure that the research instruments are valid, external validity was used as the piloting of the research instrument used a sample that is smaller than that targeted audience. To ensure that the research instrument is valid, consultation was made from my supervisors and lecturers within the department.

3.6.3 Reliability of the Research Instrument

Reliability is the ability of a research instrument to consistently measure the characteristics of interest over time (Rambo, 2018). The inconsistency of a research instrument reflects the existence of random error, which may arise at the time of data collection due to inaccuracy by an investigator or the instrument used to elicit information (Leary, 2014). Although data collection is a one-time event, pre-testing plays a crucial role in enabling the investigator to determine and improve reliability of the instruments. The split-half technique was performed using the Statistical Package for Social Sciences (SPSS) version 25.0 programme to determine Spearman-Brown Split-Half Reliability Coefficient, also known as the Spearman-Brown Prophecy Coefficient, which was used to estimate full test reliability based on split-half reliability measures for selected items from pilot testing feedback from Uasin Gishu County.

According to Garson (2019), Spearman-Brown Coefficient of 0.80 to 0.89 showed adequate reliability, while 0.90 and above is an indication of good reliability. In addition to split half method, Cronbach's Alpha Reliability Coefficient test was used to determine the inter relatedness of the items in the questionnaires to show how closely the items measure the constructs in the study. Using 15 items of the questionnaire the study was able to obtain

Cronbach's Alpha Reliability Coefficient test value of 0.89 which met the reliability test cut mark of 0.8. Since Cronbach's Alpha Reliability coefficient is more confirmatory in correcting and improving on the items to ensure that they measure the construct as intended.

3.9 Data Collection Procedures

The process of collecting data was initiated after obtaining the primary authorization and permit from relevant institutions. It was followed by training of the research assistants on the purpose and ethics of the data collection process. The questionnaires were dropped and picked after two weeks. The researcher also used two research assistants who were tasked to collect from County Government. The data collected was ready for data analysis and interpretation.

3.10 Data Analysis and Presentation

The data collected was screened, sorted and coded into SPSS version 21.0. Data was analyzed using descriptive and inferential statistics with qualitative data analyzed using thematic analysis. The final results were presented using frequency distribution tables and logical statements. According to Clamp, Gough and Land (2004), quantitative analysis utilizes a statistical approach to generalize data where descriptive and inferential data is appropriate. The qualitative data from open ended questions were analyzed using thematic analysis that involved organizing the responses in a logical statement. Based on the current study the quantitative data was addressed using both descriptive statistics as well as inferential statistics. Descriptive statistics was used where the standard deviation and mean were utilized. Inferential statistics involved the use of the multiple linear regression model given below.

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

Where

Y = Public service delivery (Dependent Variable)

β_0 = Constant Term

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients

X_1 = IFMIS implementation

X_2 = Telecommuting

X_3 = Cloud Service

X_4 = Automation

e = Error Term

However, the data was presented using tables and charts. A diagnostic test was conducted which included normality, homoscedasticity, linearity, autocorrelation and multiple collinearities. The normality assumption was tested using Kolmogorove-Smirnov test to test whether samples came from a population with specific distribution. Homoscedasticity was tested using P-P plots for normality. autocorrelation (independent of residuals) tested using Durbin-Watson test, and multi-collinearities tested using Variance Inflation Factor. Descriptive information was presented in form of frequencies, percentages, mean and standard deviations which were computed for each individual variable. The analysis of the four variances (one way ANOVA) was carried out for the purpose of answering the individual research questions. The null hypotheses was tested using at 95% significance levels this means that the null hypotheses was rejected if $p < 0.05$, based on a two tailed test and the degree of freedom. The findings of the study were presented using frequency distribution tables and logical statements.

3.11 Ethical Consideration

The researcher ensured that ethical and professional standards of research were followed. To ensure formality of the research, there was authorization from various institutions and authorities before conducting the study. Ethical consideration is critical in ensuring that the scientific study is credible and acceptable universality. A significant large content of this study is original that means that the researcher distanced from cases of plagiarism. The respondents were assured that the information they provided was kept confidential and was used for the purpose of the study only. This was enhanced by hiding their identity during data collection process. The respondents were not asked to disclose their names in the questionnaire.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION, PRESENTATION & DISCUSSION

4.1. Introduction

The chapter outlined the methodology that was used to analyze data into useful information. The methods used for analysis include; descriptive and inferential statistics. The findings obtained from the study were presented using frequency distribution tables. The presentation follows interpretation by linking the findings with literature review. The section outlines; questionnaire response rate, results per objectives, interpretation and discussion.

4.2. Questionnaire Response Rate

The sample size of the study was 129 respondents, these respondents were given questionnaires in which 129 were fully filled and returned. This return rate of the research instrument represents a 100% questionnaire response rate. This percentage was achieved by keenly following the respondents and providing them necessary assistances when they are filling the instruments. Bless and Higson-Smith (1995) state that a 100% questionnaire response rate is possible if the researcher conducts a keen follow up of the instruments during the data collection process.

4.3. General Information

The section presents questions relating to employee work activities. These questions covered how long they have worked in the County Government, and the most ICT strategies they have been exposed to in their work station. The questions were important in assessing the employee's knowledge on ICT strategies and experience in their work stations. Findings to these questions were presented in Table 4.1.

Table 4.1 General Information

Question	Response	Frequency	Percentage
How long have you worked in the County Government?	Less than year	28	21.7
	2-4 years	69	53.5
	5-7 years	20	15.5
	8-10 years	8	6.2
	Above 10 years	4	3.1
Totals		129	100
Indicate the most ICT strategy that you are exposed to?	Automation	24	18.6
	Cloud Services	20	15.5
	Telecommuting	18	14
	IFMIS implementation	67	51.9
Totals		129	100

Source: Author 2022

The findings shown in Table 4.1 showed that majority of respondents 53.5% have worked in the County government for a period of 2-4 years, followed by 28 (21.7%) respondents who have worked less than a year, 20 (15.5%) respondents have worked 5-7 years, and lastly 8 (6.2%) and 4 (3.1%) respondents have worked for a period of 8-10 years and more than 10 years respectively. The findings showed that majority of the respondents have worked 4 years and below. The findings indicating that they are aware of the operations of the organization over the four years period.

4.4. IFMIS Implementation on Service Delivery

The first objective was to establish the effect of IFMIS implementation on service delivery. The respondents were provided with statements defining the relationship between the objectives variables that they were required to give their level of agreements. Findings to these statements and level of agreement were presented in Table 4.2.

Table 4.2 Level of agreement on IFMIS implementation on service delivery

Statements	1(F,%)	2(F,%)	3(F,%)	4(F,%)	5(F,%)	Mean	SD
The quality of public finance management process and budget has improved in the county via ICT strategies.	9(7.1)	11(8.7)	2(1.6)	59(46.8)	45(35.7)	3.90	0.11
Transparency at the county has been enhanced by the use of procurement integrating	5(4.0)	14(11.1)	4(3.2)	48(38.1)	55(43.7)	4.06	0.34
The public finance management process and budget has enhanced the quantity of work done.	3(2.4)	8(6.3)	1(1.0)	56(44.4)	58(46.0)	4.25	0.21
The IFMIS system has enhanced service delivery activities in the	12(10)	14(11.1)	2(1.6)	54(42.9)	44(34.9)	3.83	0.44
Composite mean & SD						4.02	0.28

Source: Author 2022

Table 4.2 showed that respondents with a mean of 3.90 (SD=0.11) were in agreement that the quality of public finance management process and budget has improved in the county via ICT strategies. This finding was obtained after 46.8% and 35.7% respondents strongly agree and agree respectively that the quality of public finance management process and budget has improved in the county via ICT strategies. While only a few 7.1% and 8.7% of the respondents strongly disagreed and disagreed respectively that the quality of public finance management process and budget has improved in the county via ICT strategies. About 1.6% of the respondents did not give the response. Waweru and Ngaba (2019) supports the findings by

stating that public finance in the public entities had improved with institution of IFMIS in respective operations. Similarly, Rădulescu and Radu (2017) agrees with the findings by stating that budgeting have been made possible with the process of automation in the organizations.

The mean of 4.06 (SD=0.34) showed agreement that transparency at the county has been enhanced by the use of procurement integrating ICT strategies. This finding was supported by specific responses where 43.7% and 38.1% of the respondents strongly agreed and agreed respectively that Transparency at the county has been enhanced by the use of procurement integrating ICT strategies. While a smaller number of respondents 4.0% and 11.1% did strongly disagree and disagree that Transparency at the county has been enhanced by the use of procurement integrating ICT strategies. Onserio and Muturi, (2019) supports the findings by stating that transparency is necessary if operations are digitalized.

Furthermore, the study found that respondents with a mean of 4.25 (SD=0.21) stated agreement that the public finance management process and budget has enhanced the quantity of work done. The specific responses showed that 46% and 44.4% respondents agreed and strongly agreed that the public finance management process and budget has enhanced the quantity of work done. While 6.3% and 2.4% of the respondents strongly disagreed and disagreed that the public finance management process and budget has enhanced the quantity of work done. Waweru and Ngaba (2019) agreed that the process of making budgets have been enhanced in public institution through ICT integrations and networking's.

The study found that respondents with a mean of 3.83 (SD=0.44) agreed that the IFMIS system has enhanced service delivery activities in the County. This general finding was supported by the specific findings which showed 42.9% and 34.9% respondents agreed and strongly agreed that The IFMIS system has enhanced service delivery activities in the County. While a few of respondents 10% and 11% disagreed and strongly disagreed respectively the IFMIS system has enhanced service delivery activities in the County. A general composite mean=4.02 (SD=0.28) is a good agreement that the IFMIS system has enhanced service delivery activities in the County. Yator and Shale (2014) concurs with the findings by stating that IFMIS has been useful in provision of services and products in the organization.

The respondents were further asked to state qualitatively in what other way the county has utilized IFMIS in service delivery. Many of the respondents stated qualitatively that the IFMIS has increased accountability and transparency by enhancing auditing initiatives in the institution. Others stated that county government has been using IFMIS to regulate amount of

expenditures and payments. Otieno, Migiro and Mutambara (2017) supported the findings by stating that ICT integration in public sectors has improved efficiency, accountability and transparency of operations.

Qualitative findings from the key informants were presented as follows:

‘Since implementation of the IFMIS in the county the account processes and operations have improved significantly. Resources are not governed well, no wastages, quality of services offered, public accountability and transparency is not prevalent among the staff. The counties have been able to reduce errors or omissions that were previous in existence during operations (Key informants, 2022).

4.5. Telecommuting on Service Delivery

The second objective was to establish the effect of telecommuting on service delivery. Respondents were provided with a number of statements to indicate their level of agreement on the key variables in this objective. Findings showing these responses were presented in Table 4.3.

Table 4.3 Level of agreement on influence of Telecommuting on service delivery

Statements	1 (F,%)	2(F,%)	3(F,%)	4(F,%)	5(F,%)	Mean	SD
Teleworking of various functions has enabled quantity of work to be done by the County staff.	4(4.0)	12(9.5)	1(1.0)	48(38.1)	60(47.6)	4.25	1.02
Teleconferencing in communication has enabled efficiency of work to be done by staff management.	8(6.3)	9(7.1)	2(2.0)	51(40.5)	56(44.4)	4.17	1.27

Meeting held online by the County staff have enhanced transparency	11(8.7)	15(11.9)	1(1.0)	36(28.6)	63(50.0)	4.11	0.71
Telecommunicating usage in the county has enhanced service delivery of functions at the County	9(7.1)	7(5.6)	2(2.0)	64(50.8)	44(34.9)	4.06	0.21
Composite mean & SD						4.15	0.80

Source: Author 2022

Table 4.3 showed that respondents with a mean of 4.25 (SD=1.02) agreed that teleworking of various functions has enabled quantity of work to be done by the County staff. This was supported by responses where 47.6% and 38.6% respondents strongly agreed and agreed respectively that teleworking of various functions has enabled quantity of work to be done by the County staff. Furthermore, 4.0 % and 9.5% respondents showing strongly disagreed and disagreement respectively teleworking of various functions has enabled quantity of work to be done by the County staff. Allen, Golden and Shockley (2015) support the use of teleworking in organizations in enhancing communication efficiency and conveniences.

Findings further showed agreement with a mean of 4.17 (SD=1.27) that teleconferencing in communication has enabled efficiency of work to be done by the County management. This was supported by 44.6% and 40.5% respondents strongly agreeing and agreeing respectively that teleconferencing in communication has enabled efficiency of work to be done by the County management. On the other hand a few 6.3% and 7.1% respondents strongly disagreed and disagreed respectively that teleconferencing in communication has enabled efficiency of work to be done by the County management.

Further, the findings showed that respondents with a general mean=4.11(SD=0.71) showed agreement that meeting held online by the County staff have enhanced transparency at work. This was agreed by majority of the respondents 28.6% and 50% who agreed and strongly agreed respectively that meeting held online by the County staff have enhanced transparency at work. A few 8.7% and 11.9% of the respondents strongly disagreeing and disagreeing respectively that meeting held online by the County staff have enhanced transparency at work.

Uchenna, Uruakpa and Uche (2018) agreed that online meeting has become the norm in organizations enabling costs to be cut and time to be saved during decision making processes.

Lastly, finding showed that respondents with a general mean of 4.05 (SD=0.21) showed agreement that telecommunicating usage in the county has enhanced service delivery of functions. This was agreed by more of the respondents where 50.8% and 34.9% who agreed and strongly agreed respectively that telecommunicating usage in the county has enhanced service delivery of functions. While 7.1% and 5.6% respondents strongly disagreed and disagreed that telecommunicating usage in the county has enhanced service delivery of functions. The composite mean =4.15 and SD=0.80 showed agreement that Telecommunicating usage in the county has enhanced service delivery of functions. Ansong and Boateng (2018) agrees that telecommuting is essential for organizations that need to enhance service delivery. Respondents were asked to state in what other way the county utilized telecommuting has in service delivery. Many of the respondents stated qualitatively that it has enhanced social interaction and linkages in the County.

The qualitative findings from the interview schedule were reported as follows:

'The adoption of the telecommunicating in the county has enhanced the quality of work offered in the county. Employees are able to communicate, share information and obtain feedback. It has enabled meetings to be conducted at specific times saving costs and enhancing attendance of the participants. County staffs have been able to access information and share information on a click of a button [Key informants; 2022].

4.6. Cloud Services and Public Service Delivery

The third objective of the study was to establish the effect of cloud services and public service delivery. The respondents were given statements to provide their level of agreements and this was presented in Table 4.4.

Table 4.4 Level of agreement on Cloud Services and Public Service Delivery

Statements	1 (F,%)	2(F,%)	3(F,%)	4(F,%)	5(F,%)	Mean	SD
The county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done.	12(9.5)	11(8.7)	4(3.2)	66(52.4)	33(26.2)	3.86	0.44
The county using fast internet has led to access of intergovernmental transaction hence enhancing quality of work.	9(7.1)	10(7.9)	5(4.0)	64(50.8)	38(30.2)	3.97	1.37
Existence of networks between departments has enabled file transfer and data access thus increasing transparency.	7(5.5)	8(6.3)	2(2.0)	67(53.2)	42(33.3)	4.09	0.41
There is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work.	13(10.3)	16(12.7)	3(2.4)	55(43.7)	39(31.0)	3.85	1.22
Composite mean & SD						3.94	0.86

Source: Author 2022

The findings in Table 4.4 showed that 5.2% and 26.2% respondents agreed and strongly agreed respectively that the county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done. While 9.5% and 8.7% respondents strongly disagreed and disagreed that the county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done. The general mean =3.86 (SD=0.44) showed agreement that the county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done.

Findings further showed that 50.8% and 30.2% respondents agreed and strongly agreed respectively that the county using fast internet has led to access intergovernmental transaction hence enhancing quality of work. While 7.1% and 7.9% respondents strongly disagreed and disagreed respectively that the County using fast internet has led to access intergovernmental transaction hence enhancing quality of work. The general mean=3.97 (SD=1.37) showed

agreement that the county using fast internet has led to access intergovernmental transaction hence enhancing quality of work.

Furthermore, results showed that 53.2% and 33.3% respondents agreed and strongly agreed respectively that existence of networks between departments has enabled file transfer and data access thus increasing transparency. While 6.3% and 5.5% of the respondents strongly disagree and disagree respectively that existence of networks between departments has enabled file transfer and data access thus increasing transparency. The general mean =4.09 (SD=0.41) showed agreement that existence of networks between departments has enabled file transfer and data access thus increasing transparency.

To be noted further, the study established that respondents with a mean=3.85 (SD=1.22) in agreement that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work done. This finding was supported by specific responses where a 31% and 43.7% of the respondents agreed and strongly agreed respectively that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work. While 10.3% and 12.7% of the respondents strongly disagreed and disagreed respectively that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work.

The general composite mean=3.94 (SD=0.86) showed that respondents agreement that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work. The respondents were asked to state qualitatively to what other way the county has utilized cloud services in service delivery. Many of the respondents stated that they are using it for storing county data safely.

The qualitative findings from the interview schedule showed that:

'The county government has benefitted by implementing the cloud services in storage of files and materials. The county records are currently safe, it has enhanced file transfers, it has enabled on retrieval of data and interdepartmental sharing of information is enabled conveniently. Computers have been relieved the burden of storing huge bulk of data. Counties have benefited in reducing costs associated with buying stationary such as files or spaces of storing such files {Key informants: 2022}.

4.7. Automation and Public Service Delivery

The fourth objective of the study sought to establish the effect of automation on public service delivery. Respondents were given statements defining the association between automation and public service delivery in which they were required to respond to. The findings showing their levels of agreement are shown in Table 4.5.

Table 4.5 Level of agreement Automation and Public Service Delivery

Statements	1 (F,%)	2(F,%)	3(F,%)	4(F,%)	5(F,%)	Mean	SD
The automated fingerprint technology for staff logging in and out has enhanced efficiency of work.	7(5.5)	11(8.7)	2(2.0)	39(31.0)	64(50.8)	4.03	0.44
The county use of CCTV for security purposes have aided quality of work done among the staff.	10(8.1)	16(12.7)	5(4.0)	54(42.7)	38(30.2)	3.86	1.37
The lift and elevators have ease movement of employees and other stakeholders thus increasing efficiency at work.	7(5.5)	8(6.3)	2(2.0)	67(53.2)	42(33.3)	4.11	0.41
Sufficient frisking technology in the County for security purpose.	14(11.3)	17(13.7)	3(2.4)	56(43.7)	40(32.0)	3.96	1.22
Composite mean & SD						3.94	0.73

Source: Author 2022

The finding as per Table 4.5 showed that respondents with a mean=4.03 (SD=0.44) agreed that the automated fingerprint technology for staff logging in and out has enhanced efficiency of work. This finding was supported by 31% and 50.8% of the respondents agreeing and strongly agreeing respectively that the automated fingerprint technology for staff logging in and out has

enhanced efficiency of work. While about 8.7% and 5.5% of the respondents strongly disagreed and disagreed respectively that the automated fingerprint technology for staff logging in and out has enhanced efficiency of work.

The study further established that respondents with a mean=3.86 (SD=1.37) agreed that the county use of CCTV for security purposes have aided quality of work done among the staff. This was supported by specific findings where 42.7% and 30.2% agreed and strongly agreed respectively that the County use of CCTV for security purposes have aided quality of work done among the staff while 8.1% and 12.7% respondents strongly disagreed and disagreed respectively that the county use of CCTV for security purposes have aided quality of work done among the staff. Muthee & Mang'ana (2021) agreed that security needs of organizations are enhanced with the use of CCTV equipment's.

Additionally, respondents with a mean=4.11 (SD=0.41) agreed that the lift and elevators have ease movement of employees and other stakeholders thus increasing efficiency at work. This was supported by 53.2% and 33.3% of the respondents agreeing and strongly agreeing respectively that the lift and elevators have ease movement of employees and other stakeholders thus increasing efficiency at work. Odhiambo and Okello (2019) agree that elevators have been effective in reducing workers movement time thus increasing the work done by them.

Last but not least, the study established that respondents with a mean=3.96 (SD=1.22) agreed about Sufficient frisking technology in the County for security purpose. This was supported by 43.7% and 32% agreeing and strongly agreeing respectively about sufficient frisking technology in the County for security purpose. 11.3% and 13.7% disagreeing and strongly disagreeing respectively about sufficient frisking technology in the County for security purpose. The composite mean=3.94 (SD=0.73) showed agreement about sufficient frisking technology in the County for security purpose. The respondents were asked to respond on what other way the county has utilized automation in service delivery. Many of the respondents stated that receipts and payment in all sections in the County has been automated.

The qualitative findings from the key informants showed the following:

'The automation of the operations in the county has enabled jobs, activities and procedures to be performed more easily and efficiently. Security has been enhanced in the county with tools such as frisking machines and CCTV technologies. Movement across sections have been quicken with automation such as lifts and elevators. Automation of the operations of the county has significantly

been recognized by the civil reports of performance as one of the top ten counties in Kenya [Key Informants, 2022}.

4.8. Public Service Delivery

The study sought to establish from the respondents on whether there is existence of service delivery. Therefore, the respondents were given statements to provide their level of agreements which was presented in Table 4.6.

Table 4.6 Public Service Delivery

Statements	1(F,%)	2(F,%)	3(F,%)	4(F,%)	5(F,%)	Mean	SD
There is provision of quality service with adoption of ICT strategies in County.	10(8.0)	8(6.3)	1(1.0)	47(37.3)	60(47.6)	4.41	0.22
Efficiency of work has been enhanced by the use of ICT strategies in the County.	8(3.2)	8(6.3)	2(1.6)	43(34.1)	65(51.6)	3.99	0.34
Quantity of work of done has been achieved by the use of ICT strategies in the County.	5(4.0)	7(5.6)	2(1.6)	42(33.3)	70(55.6)	4.60	0.21
The accountability and transparency at work has been enhanced by ICT strategies.	7(10)	11(11.1)	4(1.6)	37(42.9)	67(34.9)	4.02	0.20
Composite mean & SD						4.26	0.24

Source: Author 2022

The study found that respondents with a mean=4.41 (SD=0.22) showed agreement that there is provision of quality service provision with adoption of ICT strategies in County. This finding was supported by a large of respondents 37.6% and 47.6% who agreed and strongly agreed respectively that there is provision of quality service provision with adoption of ICT strategies in County while 8% and 6.3% strongly disagreed and disagreed respectively.

Additionally, respondents with a mean=3.99 (SD=0.34) agreed that efficiency of work has been enhanced by the use of ICT strategies in the County. This was supported by 34.1% and 51.6% respondents who agreed and strongly agreed respectively that efficiency of work has been

enhanced by the use of ICT strategies in the County while 3.2% and 6.3% respondents strongly disagreed and disagreed respectively.

Quantity of work of done has been achieved by the use of ICT strategies in the County this was according to a mean=4.60 (SD=0.21). This was supported by 33.3% and 55.6% who agreed and strongly agreed respectively that quantity of work of done has been achieved by the use of ICT strategies in the County while 4.0% and 5.6% who disagreed and strongly disagreed respectively that quantity of work of done has been achieved by the use of ICT strategies in the County.

The mean of 4.02 (SD=0.20) showed agreement that the accountability and transparency at work has been enhanced by ICT strategies. This was supported by 42.9% and 34.9% respondents agreeing and strongly agreeing respectively that the accountability and transparency at work has been enhanced by ICT strategies. A few numbers of respondents 10% and 11.1% respondents strongly disagreeing and disagreeing respectively. Lastly, a composite mean =4.26 (SD=0.24) showed in agreement that the accountability and transparency at work has been enhanced by ICT strategies.

4.8. Inferential Findings

Inferential statistics involved the use of the multiple linear regression models. Before the model was accepted the following assumptions were tested; normality, homoscedasticity, linearity, autocorrelation and multiple collinearities. The diagnostic tests vindicated the linear regression model to be conducted.

4.8.1 Normality

The P-P plot is a viable non parametric test used to test the assumption for normality in the regression analysis. The observation is that the residual variables should be evenly distributed following the diagonal line. Figure 4.1 shows that the residuals are distributed along the diagonal justifying the normality between the study predictors and dependent variable. This means ICT strategies variables and public service delivery is normally distributed.

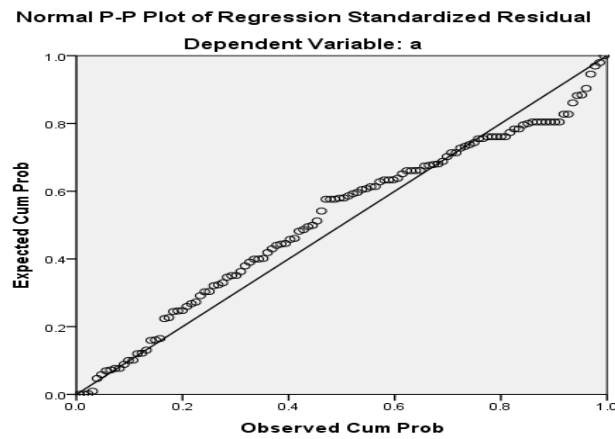


Figure 4.1 Normality

4.8.2 Homoscedasticity

The assumption states that the variance of residuals is the same in the model location. The piling of residuals in one location or common position justifies homoscedasticity between the independent variables and dependent variables. The scatter plot (Figure 4.2) shows the random dots have a central tendency. The results justify the acceptability of the regression model.

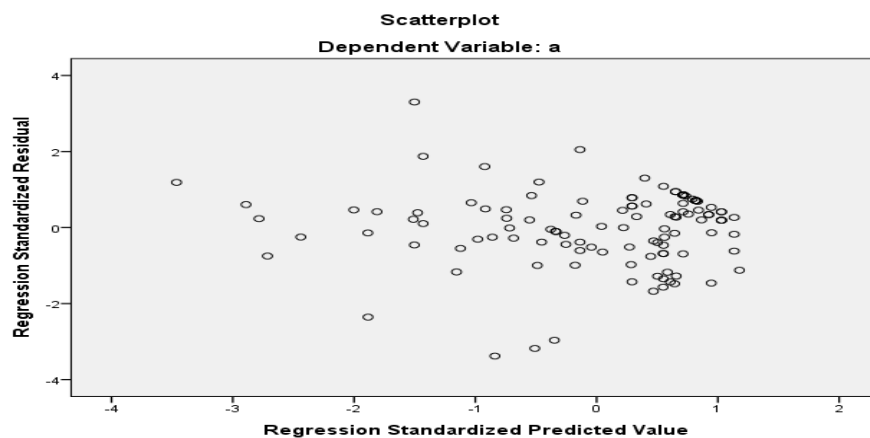


Figure 4.2 Homoscedasticity

4.8.3 Multicollinearity

Multicollinearity describes the extent to which predictors are similar or one component. It occurs when the researcher describes a component (variable) but does not differ from the other variable in meaning or definition. The variance in Inflation (VIF) is used to test for multicollinearity where values should be less than 10 and tolerance scores being less than 0.2 (Cohen et al., 2003). Findings (Table 4.7) showed that VIF values are less than 10 and tolerance less than 0.2 which means that the assumption was not violated.

Table 4.7 Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	IFMIS implementation	.199	5.030
	Cloud Computing	.132	7.602
	Telecommuting	.113	3.190
	Automation	.142	2.263

4.8.4 Residual Values are Independent

The Durbin Watson was used to test residual values whether independent value must be about 2 for this consideration to be fulfilled. Rates below 1 and above 3 are troubling and may result in inaccurate analysis. Since the number is 2.358 in this case, this belief is verified as shown in Table 4.8.

Table 4.8 Assumption for Independent Statistical Tests**Model Summary^b**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.77 ^a	.65	.84	1.1897	2.358

a. Predictors: (Constant), Automation , Telecommuting, IFMIS implementation, Cloud Computing

b. Dependent Variable: Quality of services

The various predictors to the model were tested to establish its significant contributing to unit change to the dependent variable. This means that a generalized model explaining the extent to which predictors (IFMS implementation, automation, cloud services and telecommuting) influence public service delivery. Finding was summarized in Table 4.9.

Table 4.9 Generalized Multiple regression model

Summary		R	R Square	Adjusted R Square	Std. Error of the Estimate		
Model		.77 ^a	.65	.84**	2.23		
ANOVA			Sum of Squares	Df	Mean Square	F	Sig.
Model	Regression		1376.56	2	141.32	21.45	.00 ^b
	Residual		3764.47	129	14.56		
	Total		2742.47	127			
Coefficients			Unstandardized Coefficients		Standardized Coefficients	T	Sig.
			B	Std. Error	Beta		
Model	(Constant)		1.34	1.75		.27	.04
	IFMS implementation		.65	.21	.27	1.43	.00
	Telecommuting		.24	.25	-.09	1.54	.00
	Cloud services		.45	.17	.46	1.24	.00
	Automation		.35	.25	.45	1.46	.00

a. Dependent Variable: Public Service Delivery

b. Predictors: (Constant): IFMS implementation, Telecommuting, Cloud services, Automation

Table 4.9 showed a generalized linear multiple regression model, the model summary showed that the adjusted R square value=0.84, which indicates the predictors (IFMS implementation, Telecommuting, Cloud services, Automation) contribute to 83.5% of public service delivery. According to the ANOVA analysis, $F=21.452$, $P<0.05$, showing that the relationship between the variables is significant. The coefficients indicated each predictor's unit contribution to the dependent variable. The IFMIS implementation contributing 65.3% to a unit of public service delivery, and Telecommuting was contributing 23.5% to a unit of public service delivery. Furthermore, clouding services was contributing 45.2% and automation was contributing 35.4% each to a unit of public service delivery. Therefore, the linear regression model was as follows;

Y = Public service delivery (Dependent Variable)

β_0 = Constant Term=1.75

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients

X_1 = IFMIS implementation=0.65

X_2 = Telecommuting=0.24

X_3 = Cloud Service=0.45

X_4 = Automation=0.35

e = Error Term=1.34

The summary model was as follows:

$$Y = 1.34 + 0.65X_1 + 0.24X_2 + 0.45X_3 + 0.35X_4 + 1.75$$

From the linear multiple regression model it can be noted that a unit of public service delivery is a combination of 65%, 24%, 45% and 35% of IFMS implementation, Telecommuting, Cloud services, and Automation respectively.

4.9. Summary of the Hypotheses Testing

In the hypothesis testing, the null hypotheses were rejected if the p values were less than the critical value at 95% significance level. The first null hypothesis was; H_{01} : There is no significant relationship between IFMIS implementation and service delivery, $p < 0.05$ that meant that the null hypothesis was rejected and alternative adopted. The alternative hypothesis stated that; there was a significant relationship between IFMIS implementation and service delivery.

The second null hypothesis was; H_{02} : There is no significant relationship between telecommuting and service delivery, $p < 0.05$ meant that the null hypothesis was rejected and alternative adopted. The alternative hypothesis stated; there was a significant relationship between telecommuting and service delivery.

The third null hypothesis was; H_{03} : There is no significant relationship between cloud services and service delivery, $p < 0.05$ meant that it was rejected and the alternative adopted. The alternative hypothesis stated; there was a significant relationship between cloud services and service delivery.

The fourth null hypothesis was; H_{04} : There is no significant relationship between automation and service delivery, $p < 0.05$ meant that it was rejected and alternative adopted. The alternative hypothesis stated; there is significant relationship between automation and service delivery.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The section presents the summary of the key findings analyzed in chapter four, it further concludes based on the aim and objectives of the study. Additionally, the section provides recommendation and suggestions for future studies.

5.2. Summary of the Findings

The first objective was to establish the effect of IFMIS implementation on service delivery. The findings obtained revealed an agreement that the quality of public finance management process and budget has improved in the county via ICT strategies. Additionally there was agreement that transparency at the county has been enhanced by the use of procurement integration ICT strategies. The study revealed an agreement that the public finance management process and budget has enhanced the quantity of work done, and observed that the IFMIS system has enhanced service delivery activities in the County. Generally, the study found out that the IFMIS system has enhanced service delivery activities in the County. On the other hand inferential findings based on linear regression analysis showed that IFMIS implementation is contributing 65.3% to a unit of public service delivery, and there was a significant relationship between IFMIS implementation and service delivery.

The second objective was to establish the effect of telecommuting on service delivery. The findings showed agreement that teleworking of various functions has enabled quantity of work to be done by the County staff. Additionally, there was agreement that teleconferencing in communication has enabled efficiency of work to be done by the County management. Further findings of the objective showed agreement that meeting held online by the County staff have enhanced transparency. Generally on the objective there was agreement that Telecommunicating usage in the county has enhanced service delivery of functions. Multiple regression findings in the study did reveal that telecommuting was contributing 23.5% to a unit of public service delivery, and found existence of a significant relationship between telecommuting and service delivery.

The third objective of the study was to establish the effect of cloud services and public service delivery. The study found agreement that the county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done. Furthermore, revealing agreement

that the county using fast internet has led to access intergovernmental transaction hence enhancing quality of work. The study further showing agreement that existence of networks between departments has enabled file transfer and data access thus increasing transparency, and agreement that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work. The general finding on the objective showing agreement that there is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work. The multiple regression analysis finding revealing that cloud services was contributing 45.2% and finally the study established that there was a significant relationship between cloud services and service delivery

The fourth objective of the study sought to establish the effect of automation on public service delivery. The study found agreement that the automated fingerprint technology for staff logging in and out has enhanced efficiency, and county use of CCTV for security purposes have aided quality of work done among the staff. Furthermore, the study revealed that lift and elevators have ease movement of employees and other stakeholder's thus increasing efficiency, and sufficient frisking technology in the County for security purpose. The general finding on the objective showed agreement that automation has enhanced public service delivery in the County. The multiple regression analysis showing that automation was contributing 35.4% each to a unit of public service delivery, and further establishing that there is a significant relationship between automation and service delivery.

5.4. Conclusion

The study concludes that IFMIS system has enhanced service delivery activities in the County whereas a significant relationship exists between IFMIS implementation and service delivery. Therefore, the study makes further conclusion that the quality of public finance management process and budget has improved in the county via ICT strategies, transparency at the county has been enhanced by the use of procurement integration of ICT strategies, and public finance management process and budget has enhanced the quantity of work done.

The study concludes that telecommunicating usage in the county has enhanced service delivery of functions whereas there was existence of a significant relationship between telecommuting and service delivery. Further conclusions on the objective are; teleworking of various functions has enabled quantity of work to be done, teleconferencing in communication has enabled efficiency of work to be done, and meeting held online by the County staff have enhanced transparency.

The study concludes that cloud computing services have enhanced public service delivery where as a significant relationship between cloud services and service delivery exists. The study further concludes that adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done, fast internet has led to access of intergovernmental transaction, existence of networks between departments has enabled file transfer and data access thus increasing transparency, and cloud computing since the county has large storage and access to data which has increased quantity of work done.

The study concludes that automation has enhanced public service delivery whereas a significant relationship between automation and service delivery existed. Study further make conclusion that automated fingerprint technology for staff logging in and out has enhanced efficiency, county use of CCTV for security purposes have aided quality of work done among the staff, and stakeholder's thus increasing efficiency, and sufficient frisking technology.

The general conclusion of the study is that information and communication technology strategies were found to have an effect on service delivery. This was justified by the variables of the study (IFMIS implementation, telecommuting, cloud computing services, and automation) contributing to service delivery. Therefore, the study fulfils the gaps by other empirical studies by concluding that a direct effect relationship exists between ICT strategies and public service delivery.

5.5. Recommendations

The study recommends to the policy makers in the government to ensure that ICT strategies form part of their decisions in enhancing service delivery. These policies addition to IFMIS implementation need to cover the processes of automating, cloud computing, and telecommuting. Those in managerial positions in public entities need to embrace service delivery enhancing elements such as; teleworking, teleconferencing, online meetings, digitalization of processes, employing faster internet and use of automated finger technologies. Furthermore, the management of the county should ensure that all staff are brought in board on the awareness of ICT usage. This means that they should provide programmes of training the employees of IFMIS and other technologies. Those in ICT departments should embrace competitive ICT technologies as the sector is evolving significantly. This can be achieved by having a research and innovation departments. Those enhancing their academic and research work should find empirical findings and gaps in the current study useful in enriching their theoretical knowledge and literature reviews respectively.

5.6. Suggestion for Further Studies

Future studies need to be conducted in other public entities especially in county governments to ascertain the current findings. Different study respondents and key informants should be selected to obtain a different perspective of service delivery and ICT usage. Other studies need to be conducted to establish the awareness levels of ICT in the county. Lastly, more qualitative approach needs to be integrated in future research to widen the response scope.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

Please answer by ticking appropriately on the choices provided.

1. How long have you worked in the County Government?

☐ Less than 2 year ☐ 2 – 4 years ☐ 5 – 7 years ☐ 8 – 10 years

☐ Above 10 years

2. Indicate the most ICT strategy that you are exposed to?

Automation ☐ Cloud Services ☐ Telecommuting ☐ IFMIS implementation ☐

SECTION B: ICT Strategies

2. Please answer the section appropriately using the following keys 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Part 1: IFMIS IMPLEMENTATION AND PUBLIC SERVICE DELIVERY

Statements	5	4	3	2	1
The quality of public finance management process and budget has improved in the county via ICT strategies.					
Transparency at the county has been enhanced by the use of procurement integration ICT strategies.					
The public finance management process and budget has enhanced the quantity of work done.					
The IFMIS system has enhanced service delivery activities in the County.					

In what other way has the county utilized IFMIS in service delivery?

PART 2: TELECOMMUTING AND PUBLIC SERVICE DELIVERY

Please answer the section appropriately using the following keys 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Statements	5	4	3	2	1
Teleworking of various functions has enabled quantity of work to be done by the County staff.					
Teleconferencing in communication has enabled efficiency of work to be done by the County management					
Meeting held online by the County staff have enhanced transparency at work.					
Telecommunicating usage in the county has enhanced service delivery of functions at the County.					

In what other way has the county utilized telecommuting in service delivery?

PART 3: CLOUD SERVICES AND PUBLIC SERVICE DELIVERY

Please answer the section appropriately using the following keys 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Statements	5	4	3	2	1
The county adoption of digitalization in saving and retrieval of records have enhanced efficiency of work done.					
The county using fast internet has led to access intergovernmental transaction hence enhancing quality of work.					
Existence of networks between departments has enabled file transfer and data access thus increasing transparency.					
There is sufficient cloud computing since the county has large storage and access to data which has increased quantity of work.					

In what other way have the county utilized cloud services in service delivery?

PART 4: AUTOMATION AND PUBLIC SERVICE DELIVERY

Please answer the section appropriately using the following keys 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Statements	5	4	3	2	1
The automated fingerprint technology for staff logging in and out has enhanced efficiency of work.					
The county use of CCTV for security purposes have aided quality of work done among the staff.					
The lift and elevators have ease movement of employees and other stakeholders thus increasing efficiency at work					
Sufficient frisking technology in the County for security purpose.					
The county has adopted automation in revenue collection to improving work done.					

In what other way has the county utilized automation in service delivery?

SECTION 5: PUBLIC SERVICE DELIVERY

Please answer the section appropriately using the following keys 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Public Service Delivery	5	4	3	2	1
There is provision of quality service provision with adoption of ICT strategies in County.					
Efficiency of work has been enhanced by the use of ICT strategies in the County.					
Quantity of work done has been achieved by the use of ICT strategies in the County.					
The accountability and transparency at work has been enhanced by ICT strategies					

APPENDIX II: STRUCTURED INTERVIEW GUIDE

The interview to the key informants of the study was conducted formally with each scheduled for a period of 15 to 20 minutes. The following were the structured questions:

1. How long have you worked in the County
2. Does ICT strategies implemented effective in offering service delivery?
3. How does IFMIS implementation influence public service delivery?
4. How does telecommunicating influence public service delivery?
5. How does a cloud service influence public service delivery?
6. How does automation influence public service delivery?
7. How is the public service delivery in the county due to ICT strategy?

APPENDIX 1II: LETTER OF TRANSMITAL



KOITALEEL SAMOEI UNIVERSITY COLLEGE
(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)

OFFICE OF THE DIRECTOR SCHOOL OF BUSINESS

Email: jlishenga@ksu.ac.ke
Website: www.ksuc.ac.ke

Telephone: +0722638064
P.O. Box 5-30307
Mosoriot, Kenya

REF: KSUC/SOB/MBA/PR/004

DATE: November 10, 2022

TO: WHOM IT MAY CONCERN

RE: SHADRACK KIRUI - D61/0001/2019,

This is to confirm that the above person is a bona-fide student in the School. He has successfully completed MBA course work, prepared the requisite project proposal and is ready to proceed to the field for data collection.

His project proposal is titled, **Effects of information Communication Technology Strategies on services delivery in Nandi County Government, Kenya.**

Any assistance and cooperation given to him in furtherance of his research enterprise will be welcomed and appreciated.

Thank you

Faithfully,


Prof. Josephat L. Lishenga
Director, School of Business

Cc: Prof. J. Lishenga
Dr. Joseph Mutai
Coordinator, Post-Graduate Studies Committee

APPENDIX 111: RESEARCH PERMIT

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 358226	Date of Issue: 21/November/2022
RESEARCH LICENSE	
	
This is to Certify that Mr., SHADRACK KIPTOO KIRUI of Koitaleel Samoei University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nandi on the topic: EFFECTS OF INFORMATION AND COMMUNICATION TECHNOLOGY STRATEGIES ON SERVICE DELIVERY IN NANDI COUNTY GOVERNMENT, KENYA for the period ending : 21/November/2023.	
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EFFECTS OF INFORMATION AND COMMUNICATION TECHNOLOGY STRATEGIES ON SERVICE DELIVERY IN NANDI COUNTY GOVERNMENT, KENYA

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