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MASTER OF SOCIAL SCIENCES IN LOCAL GOVERNANCE STUDIES

THE USE OF E-GOVERNANCE BY LOCAL AUTHORITIES TO IMPROVE

SERVICE DELIVERY IN RWANDA:

A COMPARATIVE STUDY OF MUSANZE AND RUTSIRO DISTRICTS

A dissertation submitted to the College of Arts and Social Sciences, School of Governance, Development and Society in partial fulfillment of the requirements for the award of the degree of
Master of Social Science in Local Governance Studies

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Kigali, August 2024

DEDICATION

My beloved wife

My beloved children

All my relatives and friends

DECLARATION

I **AbdoulatifTWAHIRWA** hereby declare that this dissertation entitled “**THE USE OF E-GOVERNANCE BY LOCAL AUTHORITY TO IMPROVE SERVICE DELIVERY IN RWANDA,A COMPARATIVE STUDY OF MUSANZE AND RUTSIRO DISTRICTS**”is my own work. I have, to the best of my knowledge, acknowledged all authors or sources from where I got information.

I further declare that this work has not been submitted to any university or institution for the award of a degree.

Signed

Date...../...../2024

APPROVAL

This is to certify that this work entitled “**THE USE OF E-GOVERNANCE BY LOCAL AUTHORITIES TO IMPROVE SERVICE DELIVERY IN RWANDA, A COMPARATIVE STUDY OF MUSANZE AND RUTSIRO DISTRICTS**” was carried out by **Abdoulatif Twahirwa** under my supervision and is submitted with my approval

Names: Dr **Vedaste NDIZERA**

Signed.....

Date...../...../2024

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May Almighty God bless you!

LIST OF ACRONYMS AND ABBREVIATIONS

DDP : District Development plan

E-Gov : Electronic Government or Electronic Governance

G2B : Government-to-business

G2C : Government-to-citizen

G2E : Government-to-employees

G2G : Government-to-government

ICT : Information and Communication and Technology

NGOs :Non-Governmental Organizations

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ABSTRACT

The aim of this study was to assess the use of e-governance by local authorities in improving service delivery. The specific objectives were to analyze the role of e-governance in improving service delivery in Musanze and Rutsiro districts, to identify challenges being faced by Musanze and Rutsiro districts in using e-governance to improve service delivery, to assess strategies used to overcome challenges faced by Musanze and Rutsiro districts in using e- governance.

The population under study is composed by 50 respondents which constituted of 9 staff districts, 12 land department office 13 Notary department office, 5 public, communication and media in the district as well as 11 in charge of ICT users in both districts. The study used random sampling by selecting specific persons who could meet the purpose of the study. The study used the formula of Yamane (1967) to select respondents.

The findings revealed that e-governance played a big role in improving and enhancing service delivery to the public in a fast, among them were improving service delivery through e-governance, improved access to information through various channels and it gives opportunity for greater participation of all people in decision making. The findings also indicated that both districts faced different challenges such as shortages of machine in Musanze district while in Rutsiro district was shortage of finances.

The results showed that strategies to increase the use of e-governance among them were training of personnel, city twinning and increase collaboration between public private partnerships.

From the discussion of findings, we can conclude that the e-governance has a significant positive effect in improving service delivery. The recommendations were provided stating that efforts should be taken to ensure that e-governance is implemented by the district in the future time as ways of improving service delivery to the public through advanced use of internet.

District should strengthen private sectors and city twinning as way to and other resources, Districts should create framework that promotes the availability of ICTs in all its departments through appropriate policy interventions. Districts should develop training programs in ICT skills in order to expand the use of e-governance. To increase the budgets of districts as way to encourage the use of ICTs in improving service delivery to the public. Governments should increase the numbers of machines to the districts

KEY WORDS: E-Governance, Service Delivery, ICT, City Twinning, Communication

CHAPTER ONE: GENERAL INTRODUCTION

1.0. Introduction

This chapter presents the background of the use of e-governance, problem statement, purpose of the study, objectives of the study, research questions as well as organization of the dissertation.

1.1. Background to the study

For the past several decades, Information and Communications Technology (ICT) has been perceived as one of the enablers to increase efficiency and effectiveness (Larbi, 1999) in the developed world to foster economic development. ICT has also been used to modernize operations of government agencies (Kickert, 2017). The benefits of leveraging ICT have led to its widespread use in both the private and the public sectors. ICT has been used to transform the public sector, to provide services to and improve interactions with stakeholders and beneficiaries, giving birth to the term “electronic government” or “e-government” (OECD, 2003).

According to the United Nations, e-government is “the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery and to expand communication channels for engagement and empowerment of people” (United Nations, 2014).

Since the invention of the first browser in 1990, developed countries started to make use of the invention and the internet which was already there. That period marked an innovation era to start offering services online. The idea did not take long to spread towards developing countries. It is difficult to pinpoint the precise origin of e-Government in developing countries, but in Africa, e-government dates back to 1996 at the time when the African Information Society Initiative (AISA) was adopted by top African leaders (Hafkin, 2009). Developing countries including the Least Developed Countries (LDCs) (United Nations, 2016b) started embracing ICTs for modernisation and economic development purposes. They have been adopting them from contexts where their use has matured along with institutional developments (Kimenyi & Moyo, 2011). Deployment of ICTs in the form of e-government systems has become inevitable in either a developed or developing context. It is evident today that all 193 members of the United Nations have some form of online presence (United Nations, 2018).

E-government as a part of e-governance refers to increase efficiency and effectiveness of service delivery by the Government to Citizens (G2C) of different portions of society and administrative activities through ICT (Rahman, 2016). Irafan (2017) argued that e-governance provides an effective service delivery of different public services, which provides easy to access services, such as online application filing, bill payments, online education, telemedicine etc. E-governance contributes towards effectiveness, efficiency and equity in public services that further enhances the quality of public service delivery (Pathak, 2008).

Irafan (2017) expressed that e-governance is the way to empower the good governance and it will allow citizens at grassroots level to interact with the government at all levels. Jain and Sharma (2007) contend that “e-governance is the public sector’s use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. E-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services.

E-governance is generally considered as a wider concept than e-government, since it can bring about a change in the way citizens relate to governments and to each other. E-governance can bring forth new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable and empower the citizen (Jain & Sharma, 2007).

Prabhu (2012) explained that e-governance is the latest trend in the governance process all over the world. Prabhu (2012) further argued that good governance can be enabled by e-governance if appropriately implemented. Good governance will be SMART (Simple, Moral, Accountable, Responsive and Transparent) governance which is so essential today in countries all over the world (Prabhu, 2012).

Prabhu (2012) further expressed those developed nations of the world such as USA, the UK, Canada, Australia, and Singapore have gone in a big way into e-governance. Developing nations like India, China, Sri Lanka, the Philippines, Brazil have also progressed well in e-governance implementation (Prabhu, 2012). It is therefore important for African countries such as South Africa to start and continue embracing e-governance initiatives to improve governance and subsequently the service delivery to citizens.

Flak, Olsen and Wolcott (2005) expressed that in South Africa and other countries, local authorities are the government level that has the most direct contact with the citizens and businesses and is responsible for providing an array of basic services (Flak, et al., 2005).

Flak, et.al. (2005) highlighted that over the last two decades, the South African government has instituted several e-governance initiatives in order to try to improve the internal processes, service delivery and the overall efficiency of local authorities. The provisions of online public services are used increasingly in order to streamline and facilitate contact between residents and public-sector bodies (Cernakova, 2015)

In Africa, the rapid advancements in ICT have led to transformations in the way businesses and governments deliver services to customers and citizens respectively (Amagoh, 2015). The government of South Africa has therefore committed itself to introduce ICT initiatives in offering services to its citizens. Ntetha and Mostert (2011) further urged that South African government has initiated several ICT initiatives to enable its departments to improve and speed up service delivery to the public. The South African e-governance program also extends to local government level, where the best examples are seen implemented in the metropolitan municipalities of Cape Town, Johannesburg, Ekurhuleni, Tshwane and (Cloete, 2011). further explained that government departments have therefore been endowed with several ICT tools to assist in this e-governance process.

Amagoh (2015) further argued that globally, governments have embraced electronic governance (e-governance) as the best mechanism through which they can more effectively respond to the needs and demands of their citizens. Thus, when properly implemented, e- governance should aim to bring citizens and businesses closer to government (Sun, Ku & Shih, 2015). Various countries have deployed different forms of e-governance, with developed countries at higher stages of development (Amagoh, 2015). Amogoh (2015) expressed that for developing countries (most of which are in Africa), e-governance deployment is still in its early stages. However, adoption of more advanced forms of e-governance has the potential to promote civic engagement by empowering citizens to interact with government officials in a more transparent manner, thereby reducing opportunities for corruption (Bannister & Connolly, 2015)

In Rwanda, The government of Rwanda has been urged to take advantage of the electronic governance systems to various stakeholders behind service provision while involving citizens in decision making, electronic Government would help to enhance trust between the government

and citizens, fight against corruption and fraud and empower members of the public to participate in governance and decision making and responsiveness which require increasing collaboration among agencies of all levels of government and non-governmental actors, (Minister for Youth and ICT, 2015). The ICT sector has been regarded a key element of Rwanda's development process. It is expected to create jobs and ensure that Rwanda will transform into a globally competitive, information-rich, knowledge-based economy. In line with these aspirations, the EDPRS defines two sector-relevant progress indicators: ICT penetration in terms of voice (i.e. phone) and data (i.e. internet) services. Introduction of e-government in the district is taken as a means of reducing costs, improving service delivery, saving time and increasing effectiveness and efficiency in the public sector.

1.2. Problem statement

It has been observed that in all districts of Rwanda e-governance has been applied as tool for improving service delivery strategy. It has been used to provide evidence on how public services are delivered to the population.

There has been long time where local government was not using e-governance in improving services delivery to the benefits of citizens and employees. The poor service delivery, poor communications between the district and residents, lack of participation in public service for all citizens and do not have access to relevant information, delays in service delivery. (Matimati, 2015).

On other hand, the greatest challenges are that citizens do not have access to adequate information on the district operations and poor service delivery is being witnessed from the people in Rutsiro District. The district department of Rutsiro are faced with poor service delivery, lack of access of information from the public, the district of Rutsiro do not have its own website where anyone can obtain districts information anywhere and some telephonenumber are not well functioning. What all these tend to expose is that there is poor service delivery, poor communications between the districts and residents, lack of participation for all citizens in Rwanda public sector in the area of ICT use. The use of e-governance system in Rutsiro district was far less developed. It was within that context that Ministry of ICT and Communication to source some funds and try implement e-governance system in those districts so as to improve and do away with poor service delivery to better improved delivery service to all citizens at all levels, (Minister for Youth and ICT, 2015).

It is from the above statement that the researcher has been attracted to carrying out a research project on the use of e-governance by local authorities to improve service delivery in Musanze and Rutsiro districts.

1.3. Research Questions

This research was guided by the following questions:

- Is there a low usage of ICT by citizens at a local government level in improving service delivery in Musanze and Rutsiro districts?
- Why are local authorities offering poor service delivery to their citizens in improving service delivery in Musanze and Rutsiro districts?
- How can e-governance tools be applied for improving service delivery for local authorities in Musanze and Rutsiro districts?

1.4. Objectives of the study

General and specific objectives have been formulated for this research.

1.4.1. General objective

The general objective of this study is to assess the role of e-governance in improving service delivery in Musanze and Rutsiro District.

1.4.2. Specific objectives

This study aims at achieving the following specific objectives:

- To examine and explain the uptake and usage of ICT tools for service delivery by citizens at local government level in Musanze and Rutsiro districts
- To assess and explain the services offered to citizens by local authorities in Musanze and Rutsiro districts
- To examine existing e-governance practice for improving service delivery for local authorities in Musanze and Rutsiro district

1.5. Hypotheses

The hypothesis is defined as prior response or propositional answers to the problem. The assertion of self-understanding has to be shown, confirmed, rejected or modified through the

work at the research ,(Khan,2014)).In this regards, there researcher provides the following hypothesis to conduct research:

1. E-governance contributes positively to the improvement of service delivery in Rutsiro and Musanze District.

1.6. Significance of the Study

This study is significant in four main ways namely: personal interest, academic interest and scientific interest and social interest.

1.6.1. Personal interest

The current research allowed the researcher to reinforce and improve skills in the use of e-Government, it also highlights to the researcher the better service related to the e-Government. This study expects to equip the researcher with appropriate and suitable skills and experience in conducting important future research.

1.6.2. Academic interest

This study was carried out in order to fulfill the academic requirement of UR requires that each student may conduct a field research and write dissertation and present it before the panel in order to get master's degree of social sciences in local governance studies and competing on labor market.

1.6.3. Scientific interest

Regarding to the scientific interest, this thesis documents were used as sources of knowledge where it will be available in URHuye library so that other researchers will consult it and used it by doing their own research in the similar fields.

1.6.4 Social interest

The study was important tool for the society because the results of this research could inspire decision makers by reading it to improve the status of e-Government by interesting all government departments it uses. Thought that, the research would encourage the Rwandan population to be more interested by electronic government as source of better delivery of government services to citizens.

The knowledge gained through the study was also provided some implication to policy makers, development practitioners such as district officer who are near to the people and are interested in expanding provision of e-governance to poor majority as well as to improve service delivery

1.7. Scope of the study

Every scientific work must be limited in time, content and space. This current study related to the period from 2015 to 2018. This research is limited in content on the assessing the role of e-governance in improving service delivery in Musanze and Rutsiro districts.

1.8. Limitation of the study

The study was constrained by slow or lack of responses. Some respondents delayed giving information. The researcher made convenient appointments with the respondents and encourages them to respond and give accurate information on time.

There were also financial constraints. The research required substantial amount of money for travelling, printing questionnaires among others. To solve this problem the researcher solicited funds from family members and friends and also looked for cheaper service providers.

1.9. Structure of the study

The study organized into five chapters as follows:

Chapter 1: It comprises an introduction presenting the background of the study, statement of the problem, objectives of the study, research questions, hypothesis, and significance of the study, scope of the study and structure of the study.

Chapter 2: The Chapter focuses on literature review.

Chapter 3: This chapter describes the research methodology.

Chapter 4: The chapter talks about findings presentations of data collected from the field.

Chapter 5: summary, conclusion and recommendations

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This chapter contains the definition of key concepts related to the research topic and the literature review. This literature review highlights some of the existing literature and attempts to consider the broad theme of the use of e-governance by local authorities to improve service delivery in Musanze and Rutsiro districts. This part enables readers for a better understanding of the study.

2.2. Definition of key concepts

2.2.1. E-Governance

According to Jain and Sharma (2007) e-governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. (Jain and Sharma 2007)

Jain and Sharma (2007) further explained that e-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services. E-Governance is the use of modern ICTs with the purpose of bringing services near to the population in the manner which it provides services to the public. (Andersen, 2010).

2.2.2. Local authorities

A local authority is a governmental organization or agency that is responsible for providing services and facilities at a local level, such as in a city, town, or district. These authorities typically manage functions like education, housing, transportation, public safety, and waste management. Local authorities operate under the laws and regulations set by higher levels of government and are often elected by the community they serve. (Minaloc).

2.2.3. Service

Service is something that the public needs which is provided in a planned and organized way by the government. A service is an action or activity performed to benefit someone else, often involving providing help, support, or a particular function. (Haines & Sharif, 2006)

2.2.4. Service delivery

Service delivery is a component of business that defines the interaction between providers and clients where the provider offers a service, whether that is information or a task, and the client either finds value or loses value as a result, (Brewer & Sigelman, 2002).

2.3. Theoretical review

The central purpose of this section is to review the theories which are associated with how e-governance has the effect on service delivery

2.3.1. E-Government implementation and development stages

E-government has been implemented in various context worldwide and matured in developed countries earlier than in developing ones as ICT use has developed along with institutional advancement in the context of the former countries. The contexts of developed and developing countries are different in various aspects in terms of e-government implementation enablers or inhibitors including infrastructure, human resource development capacity, literacy, political context and investment capacity among other elements. The difference is also evident in their levels of e-government development (United Nations, 2014) and their respective research agenda on e-government implementation. Referring to e-government research topics in recent conferences, for example in both IFIP e-Government and e-Participation conferences for 2016 and for 2017 held in developed countries, research on e-government in developed countries is more on recent trending topics focusing on 'better government' stage such as Open Government (for democracy and participation values), then Big Data and Smart Governance, and Smart Cities. Furthermore many medium-scale and even multi-national projects are implemented in the context of developed countries; for example 2010 European Initiative, and Digital Single Market (Ron, 2015; European Commission, 2015).

On the other hand, research on the e-government trending issues in the context of developing countries, particularly in the LDCs appears to be limited. Furthermore, in that context, e-government research conducted on multi-national projects seems limited in general.

Regarding the challenges faced while implementing e-government, these appear to be different in developed and developing countries. In developing countries, these challenges include infrastructure, the lack of more qualified human resources, socio-economic problems (e.g. digital divides and language problems while accessing services) political challenges, the lack of an institutional framework supporting e-government, the lack of

enough project funds, privacy and security concerns, limited IT skills, and lack of citizen awareness and participation (Nkohkwo & Islam, 2013; Weerakkody et al., 2009; Nkwe, 2012).

Most of those issues do not seem to be important challenges in developed countries. Developed countries are challenged by doing more on their e-government implementations with an increased sense of security and trust and doing more on interoperability for multi-national projects, for example, to support a single digital market, and taking advantage of opportunities offered by open government data to collaborate more with citizens and businesses for enhanced services, and to make effective use of new technologies such as cloud computing (Ron, 2015).

E-government development can be viewed in terms of Layne and Lee's four stages (2001), which are *Cataloging*, *Transaction*, *Vertical integration*, *Horizontal integration*. When one screens the development of e-government services in developing countries, especially LDCs via different reports (e.g. United Nations, 2014; United Nations, 2016; United Nations, 2018), considering the four stages, one can conclude that there is a gap to bridge as from 'Transaction' to upper stages. This implies tackling issues related to systems integration calling upon addressing organizational issues.

To develop e-government from 'Transaction' stage all through to 'Horizontal integration' stage requires making substantial organizational changes in many organizations in the public sector, mainly regarding aspects of people, processes, technology and organizational structure (Bostrom & Heinen 1977). Organizational structure at large would include regulatory frame-works and policies.

For instance, in developing countries and LDCs, organizational change issues such as adapting the organizational structure to Information Technology were identified in India and Indonesia (Nurdin & Scheepers, 2012), but when it comes to LDCs, there is limited knowledge on that topic. Only a few examples are available, such as in Heeks' (2002) study recommending in general countries in Africa, where most of the least developed countries are located, to reorganize their organisation structures for better e-government implementation. Not only Heeks, but related recommendations by Hafkin (2009) and UNECA (2009) were also made to those nations to have government strategies in place, e.g. coordination, re-design of organisational processes, outsourcing, funding, state culture and politics, leadership, centralization, and decentralisation of government project management, and performance measurement.

In Asian countries, one-stop e-government initiatives to provide online public services via a single portal were or are being implemented, for example, in India, Bangladesh, Bhutan, Sri Lanka, Mongolia (Local Governance Initiative and Network-

Asia, n.d.). But there is still a lack of research on organisational issues about implementation of those initiatives. Only recently, the integration of back-office processes in Kazakhstan's one-stop-government was discovered to be challenging (Janenov & Yesdauletov, 2017).

In Bangladesh, socio-economic impact of the country's one-stop-government is part of what was investigated (Hoque & Sorwar, 2015). In India, Paul and Paul (2014) investigated the phenomenon of one-stop-government systems interoperability for one-stop services. A report on Liberia, in Africa, only indicates that implementation of one-stop-government was started recently there (United Nations Public Administration Network, 2017).

2.3.2. Domains of E-government

In a little more detail, the domains of e-government are as follows:

2.3.2.1. Improving Government Processes: E-Administration

E-Government initiatives within this domain deal particularly with improving the internal workings of the public sector. "Improving government processes" refers to the efforts aimed at making the way government functions more efficient, effective, and responsive to the needs of citizens. (Charag, 2013)

2.3.2.2. Connecting Citizens: e-Citizens and e-Services

"Connecting citizens" refers to the efforts and initiatives aimed at fostering communication, engagement, and interaction between government entities and the public. This can enhance civic participation and ensure that citizens feel involved in decision-making processes. Such initiatives deal particularly with the relationship between government and citizens: either as voters/stakeholders from whom the public sector should derive its legitimacy, or as customers who consume public services. Talking to citizens: providing citizens with details of public sector activities. This mainly relates to certain types of accountabilities: making public servants more accountable for their decisions and actions. Listening to citizens: increasing the input of citizens into public sector decisions and actions. This could be flagged as either democratization or participation. Improving public services: improving the services delivered to members of the public along dimensions such as quality, convenience and cost, (Charag, 2013).

Connecting citizens is essential for building a responsive and accountable government. By fostering open communication and engagement, governments can create a more informed, active, and involved citizenry, ultimately leading to better governance and improved public services.

2.3.2.3. Building External Interactions: E-Society

Working better with business: improving the interaction between government and business. This includes digitizing regulation of, procurement from, and services to, business to improve quality, convenience and cost. Developing communities: building the social and economic capacities and capital of local communities. Building partnerships: creating organizational groupings to achieve economic and social objectives. The public sector is almost always one of the partners, though occasionally it acts only as a facilitator for others, (Charag, 2013).

2.3.2. Phases e-governance

The phases and types of e-governance include the phases of being present on the web and the third phase related to the customers. In the first phase, e-governance means being present on the web, providing the public (G2C and G2B) with relevant information. The format of the early government websites is similar to that of a brochure or leaflet.

The value to the public is that government information is publicly accessible; processes are described and become more transparent, which improves democracy and service. Internally (G2G) the government can also distribute static information with electronic means, such as the internet, (Ahmad, 2013).

In the second phase, the interaction between government and the public (G2C and G2B) is stimulated with various applications. People can ask questions via e-mail, use search engines, and download forms and documents. These save time; In fact, the complete intake of simple applications can be done online 24 hours per day.

In the third phase, people are getting online services without going in the office among the services got were renewal of licenses, visa and passports. (electronic signatures will be necessary to enable legal transfer of services, (G2G), (Charag, 2013).

2.3.3. Delivery models and activities of e-government

E-government can be the following

2.3.3.1. Government to population

It is the provision of online public services where local people can get different services such as marriage certificates, license, death or birth. Government to population" typically refers to the relationship and dynamics between governing bodies and the citizens they serve. (Vintar, 2014)

2.3.3.2. Activities and interaction domains

This is done when the government wants to inform the population the regulatory services. To enable the citizen transition from passive information access to active citizen participation for instance encouraging the citizen to vote. Activities and interaction domains" typically refer to the various contexts and types of engagement that people participate in, especially in fields like education, psychology, and social sciences. (Lee, 2015)

2.3.4. Disadvantages of e-government

The following are disadvantages of e-government:

2.3.4.1. Lack of equality in public access

One of the main disadvantages of e-government is the lack of equality in public access to the internet. While many people have access to the internet, there are still many who do not, particularly in developing countries. This can create a digital divide, where some citizens are unable to access government services or information online.

2.3.4.2. Reliability of information

The reliability of information on the web is also a concern. Citizens may not be able to discern between accurate and inaccurate information, which could lead to misinformation and biased public opinions.

2.3.4.3. Hidden agendas

There is also the concern that government groups may have hidden agendas that could influence and bias public opinions. E-government systems must be designed to prevent this from happening and promote transparency and accountability.

2.3.4.4. Impacts on economic, social, and political factors

The implementation and design of e-government can have potential implications for economic, social, and political factors. E-government can lead to the disintermediation of the government and citizens, which can impact power dynamics and potentially lead to social unrest.

2.3.4.5. Vulnerability to cyber attacks

E-government systems are vulnerable to cyber-attacks, which can compromise sensitive information and undermine public trust in the government. E-government systems must be designed with security in mind to prevent these types of attacks.

2.3.4.6. Cost

Although a large amount of money is spent on the development and implementation of e-government, the outcomes and effects of trial internet-based governments are often difficult to gauge or unsatisfactory. Technology keeps changing, and if the technology becomes obsolete, it can prohibit the effectiveness of e-government. The adoption of any technology platform needs to be assessed carefully and balanced not based on what is needed now, but also what the future requires.

2.3.4.7. Inaccessibility

E-government sites that provide web-based access and support often do not offer the potential to reach many users, including those who live in remote areas, have low literacy levels, or exist on poverty line incomes. Some sort of hybrid system may be required to co-exist as the e-government journey transitions, (Singh,2010).

2.3.5. Advantages of e-government

The followings are the advantages of e government:

2.3.5.1. Democratization

One goal of e-government will be greater citizen participation. Through the internet, people from all over the country can interact with public servants and make their voices heard. These technologies can create a more transparent government, allowing voters to immediately see how and why their representation in the capital is voting the way they are. This helps voters better decide who to vote for in the future or how to help the public servants become more productive, (Prattipati, 2015).

2.3.5.2. Environmental bonuses

supports of e-government argue that online government services would lessen the need for hard copy forms. Due to recent pressures from environmentalist groups, the media, and the public, some governments and organizations have turned to the internet to reduce this paper use.

2.3.5.3. Speed, efficiency, and convenience

E-government allows citizens to interact with computers to achieve objectives at any time and any location and eliminates the necessity for physical travel to government agents sitting behind desks and windows.

2.3.5.4. E-participation

The experiments of e-government have been met with acceptance and eagerness from the public. Citizens participate in online discussions of political issues with increasing frequency, and young people, who traditionally display minimal interest in government affairs, are drawn to electronic voting procedures (Yong, 2005).

2.3.5.5. Improved efficiency

One of the main advantages of e-government is the potential to improve the efficiency of the current paper-based system. By digitizing government services and information, e-government can streamline administrative processes, reduce paperwork, and save time and money.

2.3.5.6. Better communication

E-government also facilitates better communication between governments and businesses, creating a more open market and a stronger economy. For example, e-procurement allows smaller businesses to compete for government contracts, while larger businesses can access information and services more easily.

2.3.5.7. Accessibility

As society becomes more mobile, e-government services can be accessed by citizens from anywhere in the country, at any time of the day. This increases the accessibility of public services and improves the overall customer experience.

2.3.5.8. Transparency

E-government can improve government transparency by allowing the public to be informed about what the government is working on and the policies they are trying to implement. This creates a more informed and engaged citizenry, which can lead to more accountability and better decision-making.

2.3.6. E-Governance at international level

E-governance is the application of information and communication technology for delivering government services, exchange of information and services between government to citizen,

government to business, government to government, government to employees as well as back office processes and interactions within the entire government framework.

Through e-governance, government services are made available to citizens in a convenient, efficient, and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens, and businesses. In e-governance, there are no distinct boundaries (Yong, 2005).

2.3.7. National e-Governance Plan

Over the years, many initiatives have been undertaken by various state governments to show in an era of e-government. These have been made in order to improve the delivery of public services and simplify the process of accessing them. Due acknowledgment has been taken of the notion that to speed up e-governance implementation across the various arms of Government at National and Local levels, a program approach needs to be adopted, guided by common vision and strategy. This method has the ability of enabling large savings in costs through sharing of core and support infrastructure through standards, and of presenting a seamless view of Government to citizens (Yong, 2005).

2.3.8. E-government in Rwanda

Rwanda is a country with high ambitions regarding ICTs and where e-government is one of the priority areas. According to the Ministry of Information Technology and Communication (MITEC) previously designated as the Ministry of Youth and ICT (MYICT), ICTs in Rwanda are expected to enable the country in achieving its Vision 2020 of transforming the country from a Least Developed Country to a middle-income country (MITEC, 2015, MYICT, 2015).

The approach is to adopt ICTs as a mean to facilitate access to information and services which in turn would yield a dynamic and knowledge-based economy (MITEC (2015;2016;2017), MYICT (2015), and Twizeyimana (2017, p.172)). As Rwanda is concerned, considerable efforts have been put in place for ICT and its development in the country. These efforts are documented in policy documents such as the National Information Communication Infrastructure plan [2000 – 2015] and the Smart Rwanda Master Plan [2016 – 2020]. In the NICI Plan I to III [2000-2015] the target was to put the legal and regulatory framework in place and build a basic ICT infrastructure (MITEC (2015;2016;2017) and MYICT (2015)). The major infrastructure consists of telecommunication networks, a national fiber optic backbone, a submarine cable, and an integrated national data center. In the current era of the Smart Rwanda Master Plan [2016 – 2020], the focus is on digitalizing the government towards a 24/7 self-service, "cash-less" and "paper-less" government; with 95% of all government services are transacted online by 2018 (MITEC (2015;2016;2017), MYICT (2015), and Twizeyimana (2017)).

At the time of writing, the IREMBO platform is considered the core platform for e-government in Rwanda and this platform will be described next.

2.1 IREMBO Project

Building Rwanda's single window for e-government The IREMBO project is an initiative by the Government of Rwanda envisioned to digitalize all public services into a single window platform called "IREMBO" (a local term that would mean "Gateway" in English or "Porte d'entrée" in French). In their wish for a solution to inefficient manual processes, delays in service delivery, long queues and bottleneck in service delivery, the government of Rwanda has entered into a public private partnership (PPP) with the private company Rwanda Online Platform Ltd (henceforth referred to as ROL) for the digitalization of government-to-citizens (G2C) and government-to-business (G2B) services MITEC (2015). The private partner - ROL is given a BOT (Build, Operate, and Transfer) agreement for the IREMBO platform that is envisioned a one-stop-shop for G2C and G2B e-government in Rwanda (Twizeyimana, 2017). According to the BOT agreement, the company ROL is expected to build and operate the IREMBO platform for 25 years (Ibid.). In this PPP, as per the BOT agreement, the government expects to reap the benefits from the private partner's capacity to design, finance, procure, build, and maintain the platform. The company ROL is paid through a commission fee framework, a percentage taken from the service fee paid by citizens when they transact with the government services via the platform (Ibid.). The services to be digitalized include services related to life events (birth, marriage, and death), land management, driving licenses, doing business licenses, road traffic, motor vehicle inspection, etc. (Ibid.). The first 100 e-services are planned to be available by the end of 2017; and a visit to the IREMBO platform¹ in March 14, 2017, showed that IREMBO was hosting 44 services online (Ibid.). The IREMBO as a platform provides a front-office for users (citizens and businesses) to file their applications over the internet, and a back-office system for public servants to manage users' applications where back-office operations are under the responsibility of each government agency in the IREMBO project (Ibid.).

2.4.The role of e-governance in improving service delivery

The following are the role of e-governance in improving service delivery

2.4.1.E-Participation

E-participation involves the use of ICTs to promote citizen engagement in government operations. The government of Rwanda has developed various platforms for citizen engagement, such as social media, online forums, and citizen feedback mechanisms, among others. For instance, the Ministry of Finance, Planning, and Economic Development has developed an online portal where citizens can submit their views on the budget. The portal also provides real-time feedback on how citizens' views are incorporated into the budget-making process.

2.4.2. Improving service delivery through e-governance

It has a role forimproving transparency and increasing accountability of the local government. Improving service delivery through e-governance refers to the use of digital technology and online platforms by government agencies to enhance the way they provide services to citizens. This approach aims to make government services more efficient, accessible, and transparent. Improving service delivery through e-governance means leveraging technology to create a more efficient, transparent, and user-friendly government service experience, ultimately enhancing citizen satisfaction and engagement.(Maweje,.2017)

2.4.3. Improved access to information

It helps people to have access to district information and participate in different government program of decision-making process, (Prattipati, 2003). Improved access to information" refers to the enhanced ability of individuals or groups to obtain relevant, accurate, and timely information. This concept is crucial in various contexts, particularly in governance, education, and business. Improved access to information enhances the ability of individuals to make informed decisions, engage with services, and participate in civic life, ultimately contributing to

a more informed and empowered society.(Kibirige et al. 2021)

2.4.4.E-Transparency

E-transparency involves the use of ICTs to promote transparency in government operations. The government of Rwanda has developed various platforms for transparency, such as online portals for budget information, procurement, and public service delivery, among others. For instance, the Public Procurement and Disposal of Public Assets Authority (PPDA) has developed an online portal where citizens can access information on procurement processes and contracts awarded by government entities. (Kibirige et al. 2021)

2.4.5. Enhanced transparency and increased accountability of the local authority

It is a pillar for increasing accountability and transparency of the local authority, (Yong, 2005).

Accountability involves the use of ICTs to promote accountability in government operations. The government of Rwanda has developed various platforms for accountability, such as online portals for public service delivery, budget tracking, and citizen feedback mechanisms, among others. For instance, the Ministry of Health has developed an online platform where citizens can report on health service delivery and provide feedback on health facilities' performance. (Kibirige et al. 2021)

2.4.6. Improved relationship between the local authority and citizens

It strengthens the relationship between a local authority and citizens. This responds in time to the needs of citizens and gets services on 24/7, (Yong, 2005). Improved relationship between the local authority and citizens" refers to the strengthening of communication, trust, and collaboration between government entities and the community they serve. An improved relationship between local authorities and citizens leads to more responsive governance, greater civic engagement, and ultimately a more vibrant and cohesive community. This relationship enhances the overall quality of life and fosters a sense of belonging among residents.

2.4.7. Quality service and satisfaction of customer

Implementation of e-government provides people the opportunity of having public services any

time anywhere,(Prattipati, 2003).Quality service and satisfaction of customers" refers to the delivery of services that meet or exceed the expectations of customers, leading to positive experiences and loyalty.Quality service and customer satisfaction are crucial for building trust, loyalty, and long-term relationships between service providers and customers. Organizations that prioritize these aspects are more likely to achieve success and positive reputations in their respective markets. (Kayondo et al., 2015)

2.4.8. Reduction cost

Cost reduction and budget savings achieved by governance due to the use of information technologies in administrative activities can be explained as following:

1. Savings in labor costs: the application of ICT in public service delivery lowers its labor costs due to reduction of administrative employees that are required to perform the maintenance of e-government processing. Moreover, automation process reduces the time needed for a certain type of work leading to the raise of the labor productivity and consequently, to achievement of analogous targets with a smaller number of employees.
2. Savings in service delivery: minimization of leading time of service realization (reduction of travel costs, waiting time, printing materials, etc.).

E-governance has the potential to enhance public service delivery and citizen engagement in Uganda. The government has developed policies and strategies that promote the use of ICTs in government operations, including public service delivery and citizen engagement. E-governance is anchored on four key pillars, namely: e-service delivery, e-participation, e-transparency, and e-accountability. These pillars are designed to enhance access to public services, citizen participation, transparency, and accountability in government operations. Uganda has made significant strides in promoting e-governance, but there is still a need for more investment in ICTs.(World Bank, 2016).

2.5. Challenges faced by the local authorities in the use of e-governance to improve service delivery

2.5.1. Shortages of requisite machinery

Many local authorities in Rwanda do not have enough budgets to buy modern machines. This goes with isolated areas where internet facility is not accessible particularly in remote areas, (Enemærke, 2010). "Shortages of requisite machinery" refers to a situation where there is an insufficient amount or lack of essential equipment or machinery needed for specific tasks or operations. This can impact various sectors, such as manufacturing, agriculture, construction, or public services. "Shortages of requisite machinery" signifies a critical gap in the availability of essential equipment, which can adversely affect operations and overall efficiency across different sectors. (World Bank, 2016).

2.5.2. Lack of skilled personnel

Many districts have the challenge of lacking skilled personnel. This stops the use of e-governance in Rwanda in local authorities in improving service delivery, (Enemærke, 2010).

"Lack of skilled personnel" refers to a situation where there is an insufficient number of qualified and trained individuals available to perform specific jobs or tasks within an organization or industry. This can hinder productivity and effectiveness in various sectors. "Lack of skilled personnel" highlights a significant challenge in various industries where the absence of qualified workers can impede performance, growth, and innovation. Addressing this issue often requires targeted training programs, improved recruitment strategies, and investments in workforce development. (World Bank, 2016).

2.5.3. Shortage of finance

Shortage of finance is also another challenge districts face. This causes the failure for putting in place an effective way in improving service delivery. Scarce resources from the district blocked it in using e-governance and districts do not have enough money to buy the advanced machines, (Hamilton, 2000). "Shortage of finance" refers to a situation where there is insufficient funding or financial resources available to meet the needs of individuals, businesses, or organizations. This can hinder operations, growth, and overall economic stability.

2.5.4. Lack of support from the central government

Lack of regular support from the central government is the challenge faced by local authorities in improving service delivery and this hampers the use and implementation of e-governance.

In this case local government is lacking fund and this led some program failure in the district, (Hamilton, 2000).

2.6. Strategies that can be used by local authorities in improving services delivery

2.6.1. Training of personnel

E-governance requires to have skilled persons on internet use. Lack of skilled persons is particularly challenging for those who deal with e-technology. Building sustainable e-government helps to have district staff with advanced knowledge on the use of ICTs as a way to deliver services. This strategy can be a means of having employees with skills and wide experience that promote the use of e-government and the way of getting online service within the country, (Brewer, 2002).

2.6.2. Improving awareness on the use of e-governance

Lack of awareness has prevented the usage of e-governance. This is a particular challenge faced by rural people who are not aware of modern technologies, (Brewer, 2002).

2.6.3. City twinning

City twinning is a strategy that can be used to share and exchange ideas. This is about sharing some experiences and see what others have done to implement e-governance. It is a vital measure for districts skill sharing, (Brewer, 2022).

2.7. Empirical review

The literature review explores the concepts of e-governance, public service delivery, and citizen engagement. The term e-governance refers to the use of information and communication technology (ICT) to enhance the efficiency, effectiveness, transparency, and accountability of public service delivery. The adoption of e-governance in Uganda began in the early 2000s, with the launch of various initiatives aimed at improving the delivery of public services. These initiatives include the development of the National Information Technology Policy (2003), the establishment of the Uganda Communications Commission (UCC), and the launch of the eGovernment Master Plan (2006).

E-services refer to the use of information and communication technology (ICT) to deliver government services to citizens and businesses. In Uganda, the government has been implementing e-services to improve efficiency and transparency in service delivery. In this response, we will discuss e-services in Uganda, including their adoption, usage, benefits, and

statistics. The Ugandan government has been implementing e-services since the early 2000s, with the aim of improving service delivery and promoting e-governance. The government has been working with various stakeholders, including the private sector and development partners, to develop and implement e-services. E-services in Uganda cover a wide range of services, including tax registration and payment, land registration, business registration, and driver's license renewal. The services are available online, through various government portals and platforms. The government has also been working to increase access to e-services, particularly in rural areas, through the establishment of tele centers and other ICT infrastructure. Kebire and Achwoka (2019) highlight the significance of e-governance in enhancing public service delivery in Uganda.

They note that e-governance can help to improve the efficiency and effectiveness of public service delivery by providing faster and more convenient access to services, reducing corruption, and increasing transparency. It is argued that e-governance can lead to improved governance, and ultimately, economic growth. Similarly, Kibirige et al. (2021) emphasize that e-governance can enhance citizen engagement in Uganda. The authors argue that e-governance can provide opportunities for citizens to participate in decision-making processes, feedback mechanisms, and service delivery. The authors further suggest that e-governance can enable citizens to engage with their government and hold it accountable, leading to increased transparency, accountability, and responsiveness.

Several studies have investigated the impact of e-governance on public service delivery and citizen engagement in Uganda. For instance, Nabunya and Mawejje (2017) conducted a study on the impact of e-governance on public service delivery in Uganda. The study found that e-governance had a positive impact on public service delivery, particularly in areas such as tax administration, land registration, and business registration. Another study by Kibirige and Katongole (2017) examined the role of e-governance in enhancing citizen engagement in Uganda. The study found that e-governance had a positive impact on citizen engagement, particularly in areas such as health, education, and agriculture. The study also highlighted the need for continuous training and capacity building for stakeholders involved in e-governance initiatives.

According to Matimati, (2015) e-governance is the public sector's use of ICTs with the aim of improving information and service delivery, encouraging citizen participation in the decision-

making process and making government more accountable, transparent and effective, (Matimati, 2015).

A study done by Rossel(2022) noted that the use of e-governance in less developed countries is going slowly comparatively in developed countries. The study showed that 35% of local governments in poor countries have stopped on the use of e-governance as measures in improving service delivery to the population. They have been faced with many challenges in undertaking it such as insufficient technologies, lack of skilled personnel as well as they are suffering a lot from brain drain up now and insufficient of finance cause the failure of putting in place e-governance, (Rossel, 2022).

In Zimbabwe, local governments are not developed in using e-government. Most local government in Zimbabwe have not put in place e-government that is why they faced some challenges like lack of computers, lack of skilled persons. The report showed that the situation of ICTs in Zimbabwe is slowly comparatively to developed countries. This is because utilization of internet is very low and the level of penetration in remote areas is also down,(Matimati, 2015).

The key benefits of e-governance are about provision of information and services to the population on anytime, anywhere. The main purpose is improving efficiency and effectiveness in service delivery and reduce citizen interface, improved communications between local authorities and citizens,(Matimati, 2015). In conclusion e-government helps people to get on line services as way of bringing services near to the people that is critical to success of service delivery.

2.8. Research gap

The above literature in the part called empirical studies; most of them give specialty to the benefits of e-governance no study among them to point the finger on the contribution of e-governance in improving service delivery in Rwanda and the methodology are critical considering the research methodology followed in nowadays. The studies also failed to show in detail the techniques used by local authority in improving service delivery. Therefore, there is a research gap in trying to understand the relationship between e-governance and service delivery in Rwanda. It is on this regards the researcher want to assess the role of e-governance in improving service delivery in Rwanda especially in Musanze and Rutsiro districts.

2.9. Conceptual framework

The diagrammatic representation of conceptual framework shows how the variables were related. The dependent variable of this study was Service delivery independent variables considered in the study are e-governance.

Figure 1: Conceptual Model

Independent variables

<u>E-governance</u> • Internet e-service • Irembo e-service • Mobile e-service
--

Dependent variables

<u>Service delivery</u> Business licences Birth certificate Transfer of land title Registration for driving test Improvement in tax payment Application forms for licenseover the web.
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Source: (Compiled by the author, 2023)

During this study, this model was used but some aspects will be left out due to limited data available, therefore, the researcher will adopt some elements of the above model. The above model clearly identifies the two variables that were focused on in the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

This chapter focused to research analysis and design, target population, sampling techniques, sample size and data instrument such as interview, questionnaire and processing and analysis that can describe the methodology as a part that can explain technical procedures in manner appropriate for the audience.

3.2. Research design

Dawson (2002) defines a research design as outline, plan or strategy specifying the procedure used in investigating the research problem. Qualitative and quantitative approaches were used. The qualitative methods helped in obtaining information that relates to the appreciation, feelings of respondents, ideas, attitudes of respondents and thereafter to their meaning and interpretation while Quantitative method gives priority to searching for statistic frequencies, tables, and percentage.

3.3. Target Population

According to (Alvi, 2016) target population refers to all the members who meet the particular criterion specified for a research investigation and the selected individuals assist in coming up with a research conclusion, making use of data collection methods.

In this study, the target population is composed by 30 districts staff, 20 land department office, 20 department of notary, 5 public, communication and media in the district as well as 25 in charge of ICT users in both districts. The target population equals to 100 employees. These divisions are actively involved in the use of e-governance within district. A sample was selected because the researcher is not able to meet and interview all of them and other reasons for choosing this target population is that they have all information to provide about the role of e-government in improving service delivery in Musanze and Rubavu districts.

3.4. Sampling techniques

According Alvi (2016) random sampling is the basic sampling technique where we select a group of subjects for study for larger group (population). Everyone is chosen entirely by the chance and each member of the population has equal chance of being included in the sample. The study work used random sampling by selecting specific persons who could meet the purpose of the study.

3.4.1. Sample size

Sampling is the process of selecting elements from the total population in such a way that the sample elements selected represent the total population. Thus, in research, the sample should be a representation of the total population such that as much as possible, most characteristics of the population should be represented in the sample selected (Martin, 2005). To calculate a sample a formula of Taro Yamane's (1967) was presented below.

$$n = \frac{N}{1 + N * (e)^2}$$

n=Sample size

N=Population size

e=Acceptable sampling error (0.1)

$$n = \frac{100}{1 + 100(0.1 \times 0.1)} = 50 \text{ Respondents}$$

Table 1: Sample structure

Departments sample size	Musanze	Rutsiro	Total
Districts staff	5	4	9
Notary department office	7	6	13
Land department office	5	7	12
ICT users	6	5	11
Public, communication and media department	2	3	5

Source: Researcher, 2023

The researcher selected 50 respondents as a sample size of which 9 were districts staff, 13 were notary department and 12 were land department office 5 public communication and media department last were 11 ICT users in both districts.

3.5. Data collection techniques

In this research, the following techniques were used to collect data from the field:

3.5.1. Interview technique

Freitas et al, (1998) defines the technique of interview as a scientific investigating process, using a process of verbal communication, to collect some information in relation with the fixed goal.

This technique has used as a way of getting precise and relevant answers as the respondents responded to what there were asked.

3.5.2. Questionnaire technique

Guthrie, (2010) defines a questionnaire as a list of questions to be answered by the survey respondents. The researcher was set up written questions and distributes them to the concerned selected sample, so that they can give their own opinions and then it is up to the researcher to make a conclusion basing on their opinions. This technique helped the researcher to quantify different data to get a clear picture on the topic of the study.

3.6. Methods of data analysis

Method is the entire intellectual operation knowingly coordinated, by which science seeks to achieve the realities as it strives towards, it demonstrates and verifies them, (Dey, 1993).

3.6.1. Statistical method

Dey, (1993) defines statistical method as a set of means used to quantify the results of the researcher. This method helped researcher to present quantified results in forms of graphs and the results of my survey basing on mathematical data.

3.6.2. Analytical method

This method enables a researcher to make a systematic analysis of data collected information, it emphasizes on dealing with each case on its own rather than the whole unit (Dey, 1993). This method helped the researchers to have clear conclusion of how Musanze and Rutsiro districts use e-government in improving services delivery rendered to its citizens.

3.7. Validity and reliability of research instruments

Good research must meet the validity and reliability that are most important in evaluating a measurement tool of a research.

3.7.1. Validity of the Data

Validity is the ability of a measuring instrument or research study to measure what it claims to measure(Creswell,2003) For measuring the validity of research instrument, the experts in research play a major role.

Through this research, the researcher used the method of duties judgment, whereby after making the questionnaire, we gave it to experts in research to ensure its validity(Creswell,2003). Then after, the researcher made necessary adjustments. In so doing, the researcher made the questionnaire clearer, more specific, relevant logical.

3.7.2. Reliability of the research instruments

In order to ensure the reliability of research instrument, the researcher himself after comparing himself questionnaires with other assessment tools, conducted a pilot survey on a group of 50 respondents in Musanze and Rutsiro districts in order to see whether the proposed items of the questionnaires could really help measure the role of e-governance in improving service delivery. (Creswell, 2003)

3.8. Ethical Considerations

Malterud (2001)defines ethics as norms that are expected to be followed and may also be referred to as principles of good behavior”. The researcher was ensuring that no respondent was be forced to participate in the study. The respondents were also assured of the confidentiality of the information they provided and that the results of the study were used for research purposes only. The research instruments were designed to avoid embarrassing questions. The data collected was analyzed and presented correctly to avoid misinterpretation.

3.9. Conclusion

The third chapter entitled “research methodology” the conclusion is drawn about research analysis and design, target population, sampling techniques, sample size and data instrument such as interview, questionnaire and processing and analysis that can describe the methodology as a part that can explain technical procedures in manner appropriate for the audience. In order to measure the research instruments, the researcher described the validity and reliability of research instruments. The researcher analyzed field data by editing, coding and putting the findings in the table in order to interpret them.

CHAPTER FOUR: FINDINGS PRESENTATION AND DISCUSSION

4.1. Introduction

This chapter presents the analysis and discussion of the findings to the study. The data is presented in form of tables. Presentations of findings has been organized in accordance with the study objectives. Therefore, the results of this study were based on the “the role of e-governance in improving service delivery in Rwanda. A Comparative study of Musanze and Rutsiro districts. A comparative study of Musanze and Rutsiro Districts

4.2. Presentation, analysis and interpretation of Research findings

This part deals with presentation, interpretation and analysis of the data collected from the field in order to make appropriate conclusion. The percentages were used to analyze and interpret the data after we have summarized the findings. The findings have been organized as per the objectives of the study.

4.2.1. Identification of Respondents

In the aim of getting reliable data, it is necessary to know well the identification of the respondents concerned by the study who are able to give relevant information to the research. In fact, the researcher identifies the respondents according to the following criteria: sex, age, level of studies and marital status.

4.2.1.1. Gender distribution of the respondents

The following was the gender distribution of respondents:

Table 2: Distribution of respondents by gender

Gender	Frequency	Percentage
Male	35	70
Female	15	30
Total	50	100

Source: Field data, 2023

From Table 2, it is noted that 70% of respondents were male while 30% were female. This means that male is more than female in the use e-governance and its associated benefits.

4.2.1.2. Education background

Table 3: Distribution of respondents by educational level

Education level	Frequency	Percentage
University	25	50
Secondary	15	30
Primary	10	20
Total	50	100

Source: Field data, 2023

Table 3 indicates the level of education of respondents, 50% of respondents have University level followed by 30% with secondary level, 20% finished primary level. The level of education helped to know the ability of respondents in terms of the use of e-governance to improve service delivery in Musanze and Rutsiro districts

4.2.1.3. Classification of respondents by age

Table 4 demonstrates the classification of persons surveyed by age is important for knowing the role of e-governance in improving service delivery in Musanze and Rutsiro districts

Table 4: Distribution of respondents according to their ages

Age group	Frequency	Percentage
21-30	4	8
31-40	25	50
41-50	15	30
51-60	6	12
Above 60	0	0
Total	50	100

Source: Field data, 2023

As shown from Table 4 the largest number of respondents fall into the age group of 31-40 that makes the percentage of 50%. About 30% of respondents fell between the ages of 41 and 50, about 12% of respondents are aged between 51-60 and 8% are aged between 21-30 years old.

4.2.1.4. Marital status of the respondents

Marital status is an important element in any research process. That is why, our respondents are found in different social categories including single, married, divorced and widows.

Table 5: Classification of respondents according to their marital status

Marital status	Frequency	Percentage
Single	15	30
Married	35	70
Widows	0	0
Total	50	100

Source: Field data, 2023

Table 5 shows that the most respondents are married about 70% followed by single about 30% and 0% of widows. Marital status is very important in order to know if the male and female are involved in the use of e-governance to improve service delivery. Depending on the information found on the field survey, a big number of respondents are grouped in married social category and social category of single represents a small number of the surveyed population.

4.2.2. Awareness of e-governance in Musanze and Rutsiro districts

People's knowledge on e-governance and its use to improve service delivery.

Table 6: Respondent's opinions about awareness of e-governance

		Musanze		Rutsiro	
Question	answers	Frequency	%	Frequency	%
Are you aware of e-governance and its role to improve service delivery in Musanze and Rutsiro district?	Yes	18	72	10	40
	Not	7	28	15	60
	Total	25	100	25	100

Source: Primary data, 2023

Table 6 shows people's levels of knowledge on e-governance and its role to improve service delivery in Musanze and Rutsiro at different level.

During the field research, the researcher noted that 72% of the respondents to questionnaires and interviews knew about e-governance and its associated roles, 28% have limited knowledge about on e-governance. Comparatively in Rutsiro district, it was noted that 60 % of the respondents do not have adequate information on what is e-governance and its functions while 40% of respondents noted yes.

One Staff district noted that it is only not the residents lacked knowledge on e-governance as some of the districts employees and management expressed ignorance and lack of adequate knowledge on the issue. In supporting this argument, one respondent in land department stated that in Rutsiro district majority had limited knowledge about e-governance and the residents did not have adequate information on what is e-governance and its functions.

The researcher also noted that there is lack of awareness and deep understanding on e-governance system and its use by local authorities to improve service delivery as evidenced by 28 % in Musanze and 60 % in Rutsiro on the above table.

4.3. Role of e-governance in improving service delivery in Musanze and Rutsiro Districts

The e-governance applications have many benefits for citizens, business and government entities

Table 7: Respondents' opinions about the role of e-governance

		Musanze		Rutsiro	
Question	answers	Frequency	%	Frequency	%
What is the role of e-governance in improving service delivery in Musanze and Rutsiro district?	Improving service delivery through e-governance	11	44	8	32
	Improve access to information	8	32	7	28
	Improvement of service quality and user satisfaction	6	24	0	0
	Enhanced transparency and accountability of the local authority	0	0	4	16
	Improved relationship between the local authority and citizens	0	0	6	24
	Total	25	100	25	100

Source: primary data, 2023

From Table 7, indicates that in Musanze district, 44 % of the respondents said service delivery has been improved through e-governance, 32% of the respondents had access to information, 24% of the respondents said there was improvement of service quality and user satisfaction due to e-governance. Comparatively in Rutsiro district, 24% of the respondents said e-governance improved relationship between the local authority and citizens, 16 % of the respondents noted that it enhanced transparent and accountability of the local authority and 32% of the respondents noted improving service delivery through e-governance and last were 28% noted improve access of information

One staff of district said that, in Musanze district the all efforts are made towards e-governance as a way to provide service delivery that is why our citizens are using Irembo to get services like driving license, tax payment and birth certificate so this improves service delivery to the public and to ensure that citizens have access on it.

The findings of this work are supported by Alexander (2008) where he argued that e-governance system provide a benefit of improved and enhanced services delivery to the public in a fast, effective and efficient manner, better delivery of services and information through various channels such as internet and websites and it gives opportunity for greater participation of all people in decision making. Improved service delivery will lead to high levels of trust by citizens and will be able to pay their rates in times.

In Rutsiro district majority of respondents saw e-governance as means for improving relationship between the local authority and citizens. The ICT users indicated that the use of e-governance system especially in Rutsiro district is very low. Local authorities in many Rural as well as urban in Rutsiro have not yet adapted the initiative to use e-governance like Musanze due to shortages of communication technologies, suffering a lot from brain drain. So, this system is somehow difficult in Rutsiro district.

A few people saw e-governance as way to interact and participate only not also think about using it to get service through Irembo what majority of them is why are not know other benefits behind.

4.4. Improved domains due to the use of e-governance in Musanze and Rutsiro districts

Different domains were improved due to e-governance in Musanze and Rutsiro such as, tax payment, birth certificate and renewal of driving license

Table 8: Respondents opinions about improved domains due to the use of e-governance in Musanze and Rutsiro districts

		Musanze		Rutsiro	
Question	Answer	Frequency	%	Frequency	%
Which among the following improved most due to the use of e-governance in Musanze and Rutsiro districts?	Improvement in tax payment	25	100	25	100
	Renewal of driving license	0	0	0	0
	Birth certificate	0	0	0	0
	Marriage certificate	0	0	0	0
	Total	25	100	25	100

Source: Primary data, 2023

Table 8 shows the service most improved due to e-governance.

About 100% of respondents in both districts said that e-governance facilitated them to pay tax, because people are getting online services without wasting the time.

One representative of land office noted that e-governance enables Rwandan citizens leaving in Rwanda or abroad to get services very faster and without high expenses related to replacement and time. Even though e-governance improved most payment of tax Rutsiro has some particular issues such as infrastructure facilities are still low, the ways used were still low because accessibilities of internet services are not there like Musanze where everyone can get it everywhere due to availabilities of internet, internet centers technology.

4.5. E-governance on service delivery in Musanze and Rutsiro district

E-government can serve a variety of different ends such as better delivery of government services to citizens, improved interactions with business and citizen empowerment through access to information.

Table 9: Respondents opinions about appreciation of e-governance in Musanze and Rutsiro districts

		Musanze		Rutsiro	
Question	Answer	Frequency	%	Frequency	%
To what extent do you appreciate service delivery in Musanze or Rutsiro district?	High	5	20	8	32
	Very high	20	80	17	68
	Low	0	0	0	0
	Very low	0	0	0	0
	Total	25	100	25	100

Source: Field data, 2023

Table 9 shows that e-governance within Musanze contributes on service delivery as confirmed by 80 % of respondents at very high level and 20 % of respondents confirmed that e-governance contributes on service delivery at high level. Comparatively in Rutsiro district e governance was appreciated at high level as confirmed by 68 % of the respondents and very high level as confirmed by 32% of the respondents.

During the field research it was noted that 80 % of the respondents advocated the use of e-governance system because it provides empowerment of citizens through greater access to local authority information and ability to interact and participate

One representative of Notary department office noted that people have started to appreciate the system of e-governance as an opportunity to provide service delivery between local authorities and citizens as well as contribute to the achievement of good governance goals. This is based on an improved service delivery to the citizens due to e-governance.

4.6.E-governance and the way of accessing services

E-government contributed on business service delivery in terms of speed up the services, low expenses and credible services.

Table 10: Respondents opinions about the way of accessing services

		Musanze		Rutsiro	
Question	Answer	Frequency	%	Frequency	%
Do you agree that better service is caused mainly by e-governance (the way you access services)?	Agree	5	20	8	32
	Strong agree	20	80	17	68
	Disagree	0	0	0	0
	Strong disagree	0	0	0	0
	Total	25	100	25	100

Source: Field data, 2023

Table 10 indicates the opinions of respondents about the way of accessing services. About 80% of respondents are strongly agreed that e-governance contributed in accessing services while 20% of respondents are agreed that e-governance contributed in accessing services delivery in Musanze district. Comparatively in Rutsiro, about 68% of respondents are strongly agreed that e-government contributed to accessing services while 32% of respondents are agreed that e-government contributed in accessing services delivery.

This implies that e-governance is having positive impact on the way citizens access services. Though Irembo e- service people can get different services such as license renewal, birth/marriage certificates and this shows that in Musanze and the same time in Rutsiro, respondents said that due to e-governance people are accessing services.

The findings of this study imply that the more the progress is made towards attainment of e-governance goals (coordination, and cost effectiveness), the more are the positive effects in areas affected by the introduction of e-government (such as provision of services, ability to do the job, government transparency and accountability, citizen communication, etc.).

4.7. Challenges faced by local authorities in the use of e-governance to improve servicedelivery

This section was briefly introduced the most important and common challenges.

Table 11: Respondents' opinions about challenges faced by the local authorities inthe use Ofe-governance in improving service delivery

		Musanze		Rutsiro	
Question	Response	Frequency	%	frequency	%
What are the challengesfaced by the local authorities in the use of e-governance to improve service delivery ?	Shortages of machines	25	100	0	0
	Lack of skilled personnel	0	0	0	0
	Shortage of finance	0	0	25	80
	Total	25	100	25	100

Source: Field data, 2023

From Table 11, about 100% of respondents in Musanze confirmed that shortage of machines is the most challenge Musanze faces.Comparatively in Rutsiro district faced the challenges of the shortage of finance with 100% as confirmed by the respondents.

The challenges of shortage of machineswere mentioned by respondents as major challenges that has the greatest impact on the use of e-governance system by the authorities to improve service delivery in Musanze.

One staff district said that the challenges that Musanze as local authority is facing include shortage of machines due to the time delay for procurement.Despite the many benefits, there is limited advanced computers, fax machines and equipment of internet installations so that the local authorities can have a district website.

From the management and employees cited that lack of adequate machines is a challenge faced by the district.The findings fromthe research indicated that the district does not have its own website due to the lack of adequate ICTs infrastructure. Main channels of communication between the general public and the local government is still largely over the counter-meaning face to face,some departments have obsolete machines e.g computers, some

Departments have few computers which are functional and some of the operations are still being done manually since people want online services which is fast and there are complaints from the residents that there are delays in response from the local government since some responses are taking too long some even a month

On the side of Rutsiro respondent noted that finance challenge because it does not have reserved budgets for the implementation and the use of e-governance as way to improve service delivery. As result local authorities have been failing to implement e-governance effectively to improve service delivery. Local authorities have experienced acute shortages of finance that have crippled their ability to provide improved services consistently. Lack of strong financial base from the district has led to lack of using e-governance since district does not have enough money to purchase the advanced machines

4.7.1. Challenges related to shortages of machines

At this point the researcher wanted to analyze the challenges faced by local authority in terms of shortage of machines.

Table12: Respondents' views about the challenges of shortage of machine

		Musanze		Rutsiro	
Question	Answer	Frequency	%	Frequency	%
Do you agree that low ICT in place and cost of internet access are the cause of shortage of machine in Rutsiro or Musanze district?	Strongly agree	0	0	0	0
	Agree	25	100	0	0
	Strongly disagree	0	0	25	100
	Disagree	0	0	0	0
	Total	25	100	25	100

Source: Primary data, 2023

Table 12 indicates that 100% of respondents agreed that the causes of shortage of machines in Musanze district were low ICT in place and cost of internet access. Comparatively in Rutsiro 100%of respondents are strongly disagree that it was not shortage of machine but also they were not familiar of using e-governance.

The respondents stated that district do not have adequate ICTs in place and the report stipulated that the present state of ICTs in Musanze in general is very low as compared to another district like city of Kigali and Rubavu district.

This is because internet usage is growing reasonably at a slow rate, the level of penetrations in rural areas is still well below national standards. The cost of internet access in Musanze is very high and not many residents and companies can easily afford access to internet especially in rural areas. Use of advanced ICTs in Musanze is still very low in remote area and internet access being extremely high

Similar findings were highlighted in the work of Barry stated that the most challenges being faced by many local governments is shortage of machines. Many local authorities in Rwanda both rural district and urban district do not have enough financial budget to purchase modern machines. Because of inadequate machines internet facility is not accessible for example those from other remote areas and especially in geographically isolated areas.

4.7.2. Lack of skilled personnel

Lack of skilled personnel is another challenge faced by Rutsiro and Musanze district.

Table 13: Respondents opinions about lack of skilled personnel

		Musanze		Rutsiro	
Do you face the challenges of lack of skilled personnel in Musanze and Rutsiro district?	Answer	Frequency	%	Frequency	%
	Strong agree	25	100	25	100
	Agree	0	0	0	0
	Total	25	100	25	100

Source: Primary data, 2023

Table 13, shows that 100% of respondents strong agree that they are facing the challenges of skilled personnel in both district. This means that lack of skilled personnel has posed a serious challenge to the use and implementation of e-governance system in district to improve service delivery.

The findings of this study implied that lack of skilled personnel as confirmed by respondents as challenges that has the greatest impacts on implementing and use of e-governance system by local authorities to improve service delivery because they have gone away (Brain power)

4.8.3. Challenges related to shortage of finance

The local authorities are facing the challenges related to shortage of finance in Rutsiro and Musanze district. Below are opinions of respondents.

Table 14: Respondents opinions about shortage of finance

		Musanze		Rutsiro	
Do you have a challenge related to the shortage of finance in your district?	Answer	Frequency	%	Frequency	%
	Yes	25	100	25	100
	No	0	0	0	0
	Total	25	100	25	100

Source: Primary data, 2023

Table 14 indicates that all respondents interviewed are facing the challenges related to shortage of finance in order to use e-governance.

About 100% of the respondents from the staff district and employees cited that the shortage of finance is a challenge faced by the district.

The findings from the research indicate that the districts do not have its own budgets reserved to implement and use e-governance to improve service delivery.

4.8. Strategies of overcoming challenges faced by local authorities in the use of e-governance to improve service delivery

The local authorities put forward the strategies to overcome the challenges faced in the use of e-governance.

Table 15: Respondents opinions about strategies to overcome the challenges facing e-governance

		Musanze		Rutsiro	
Question	Answer	Frequency	%	Frequency	%
What are the strategies undertaken in order to overcome the challenges faced by local authority?	Engagement and collaboration with public-private partnerships	12	48	12	48
	Training of personnel	8	32	4	16
	City twinning	5	20	9	36
	Total	25	100	25	100

Source: Primary data, 2023

Considering Table 15, 48% of respondents confirmed that engagement and collaboration with public-private partnership is a strategy to overcome the challenges faced by e-governance in Musanze and Rutsiro district. About 32 % of respondents said that in order to overcome the challenges faced by e-governance, they have to apply training of personnel. Other strategies include city twinning as confirmed by 20% of respondents. Comparatively in Rutsiro district 36 % cited as city twinning and 16% represent training of personnel.

The report stipulated that collaboration with public –private partnership offers many potential advantages for the government in providing public services including infrastructure facilities.

Various types of infrastructure constitute essential public services, for instance: transportation, energy, telecommunication, waste disposal, hospital and housing facilities.

In the context of improving service delivery, collaboration with public –private partnership has been promoted for implementing of infrastructure projects for example in energy, there has been widespread introduction of independent power producers with long-term guaranteed purchase of electricity by public sector. These have met strong public resistance in many secot, leading to the termination of many water concessions in particular.

One staff district said that local governments need good sources of private finance to fund those services, and some form of government borrowing is needed for major investment in these areas to avoid inter-generational inequities.

In electricity, the private sector invested \$0.5 billion, this means that public –private partnerships are good partners in supporting infrastructure development as way of improving services delivery.

He added that the backbone for the development of any nation is its physical infrastructure and level of service delivery, such as roads and bridges, power generation plants, power transmission and distribution networks,airports and railways. These infrastructure projects are high capital intensive in nature and exert a burden on public finances and developing nations in particular have limited resources at their disposal to finance those projects. As a result, public sector authorities in developing countries are constantly on the lookout for alternatives sources of funds, and one such source is investment by the private sector through public-private partnerships.

4.8.1. Engagement and collaboration with public-private partnerships

The local authorities need to engage in public private partnerships in order to fully implement the system of e-government

Table 16: Respondent's opinions about engagement and collaboration with public- private partnerships

		Musanze		Rutsiro	
Question	answers	Frequency	%	Frequency	%
To what extent do you think the engagement and collaboration contributes to online service delivery in Rutsiro and Musanze district?	Very low	0	0	0	0
	Low	0	0	0	0
	High	0	0	0	0
	Very high	25	100	25	100
	Total	25	100	25	100

Source: Primary data, 2023

Table 16, all respondents about 100% confirmed that engagement and collaboration with public-private partnerships contributes to on service delivery. No respondent clarifies any other level of contribution to the under e-governance except very high level.

The local authority need to engage with public- private partnerships in order to fully implement the system of e-government because they have the ability to mobilize resources and they have the capacity to provide to online service more efficient and effective because they have the skilled personnel.

This research was therefore, focused online with the arguments presented by the respondents prove that engagement with public- private partnerships provides a steppingstone in sourcing funds and equipment's which in turn will help the local government to use and implement the system

4.8.2. Training of persons via service delivery in Rutsiro and Musanze districts

Training of personnel contributes on service delivery

Table 17: Respondent's opinions about training of personnel

		Musanze		Rutsiro	
Question	answers	Frequency	%	Frequency	%
To what extent do you think the training of persons contributes on service delivery in Rutsiro and Musanze district?	Very low	0	0	0	0
	Low	0	0	0	0
	High	0	0	0	0
	Very high	25	100	25	100
	Total	25	100	25	100

Source: Primary data, 2023

By referring to the Table 17, the respondents have clarified the contribution of e- governance on service delivery. Accurately, the respondents corresponding to 100 % prove that its contribution is very high in both districts.

By observing the result mentioned the above, we remark that the low and very low levels and high have very null representation.

In analyzing respondents' expectations on capabilities/ benefits derived from e-governance systems in district the respondents believe that training of personnel in e-technology is necessary so that they can make use of such in modern ICTs. Therefore, require the district staff to be equipped with the advanced knowledge on the use of advanced ICTs as way to deliver services effectively and efficiently.

4.9.3. City twinning via service delivery

City twinning is a strategy that can be used by local authorities to use e-governance

Table 18: Respondent's opinions about city twinning

		Musanze		Rutsiro	
Question	answers	Frequency	%	Frequency	%
To what extent do you think city twinning contributes on service delivery in Musanze and Rutsiro district?	Very low	0	0	0	0
	Low	0	0	0	0
	High	0	0	0	0
	Very high	25	100	25	100
	Total	25	100	25	100

Source: Primary data, 2023

The findings on the Table 18 shows that 100 % of respondents said that city twinning contributes on service delivery because it requires to visit to other outside district that have implemented or used e- governance system and share some experiences and borrow a leaf on what they have done to implement e-governance system.

As it was highlighted by interviewees that city twinning is an important tool for local authorities for learning process which can result in improved ideas and skill sharing

4.10. Discussion of findings

The discussion of the findings has been based on the results of observation and the filled questionnaire by the respondents in Musanze and Rutsiro district according to the specific objectives.

The first objective was based to find out the role of e-governance in improving service delivery

The results of comparison showed that in Musanze district 44 % of the respondents said service delivery has been improved through e-governance 32% of the respondents had access to information 24% of the respondents said there was improvement of service quality and user satisfaction due to e-governance while in Rutsiro district 24% of the respondents said e-governance increase relationship between the local authorities and citizens 16 % of the

respondents noted that it enhanced transparency and accountability of the local authorities and 32% of the respondents noted improving service delivery through e-governance and last were 28% noted improve access of information.

This present study agreed with the study conducted by Yargovan (2013) and Prattipati (2003) that the role of e-governance in improving service delivery is improving access to information, improving service delivery through e-governance, improvement of service quality and user satisfaction, reduction of process time.

From observations done in this study shows that the use of ICT in service delivery has improved and enhanced through greater access to local authority information and ability to interact and participate in Musanze and Rutsiro district. This finding matches with to other findings in the literature stated by Matimati (2015) who said that the broad aim for using e-governance system in many local authorities is to focus on clearly improving efficiency and effectiveness in service delivery, interaction between municipalities and its citizens, improvement in governance, delivery of services and citizens interface, improved communications between local authorities and citizens

The second objective was concerned with identifying the challenges faced by Musanze and Rutsiro districts in using e-governance to improve service delivery.

The results of comparison showed that about 100% of respondents in Musanze confirmed that shortage of machines is the most difficult challenge Musanze faces because advanced ICTs in Musanze is still slow in remote area and internet access being extremely high. In addition, district do not have enough financial budget to purchase modern machines. Comparatively, Rutsiro district is faced with the challenges of the shortage of finance with 100% as confirmed by the respondents.

This means that Rutsiro does not have reserved budgets for the implementation and the use of e-governance as way to improve service delivery and this goes with lack of strong financial base from the district has led to lack of using e-governance since district does not have enough money to purchase the advanced machines.

The findings from the research contradicted with the findings from the literature stated by Enemærke (2010) and Hamilton(2000)where the study revealed that shortage of machines is the most difficult challengefound in Musanze while in Rutsiro the challenge was shortage of finance in using of e-governance by local authorities

The study conducted byEnemærke (2010) and Hamilton(2000) showed in general the challenges faced by local authorities among them were shortage of finance, lack of support from central government, shortage of machines and lack of skilled persons.

Table 11 shows challenges that have made them difficult for the local government to implement and use e-governance system. The challenges of shortage of finance and shortage of machines were mentioned by respondents as the major challenges that have the greatest impact on implementingand use of e-governance system by local authorities to improveservice delivery

The third objective deals withassessing the strategies used to overcome challenges faced by Musanze and Rutsiro districts in using e- governance.

The results of comparison showed that 48% of respondents confirmed that engagement and collaboration with public-private partnership is a strategy to overcome the challenges faced by e-governance in Musanze and Rutsiro district. About 32 % of respondents said that in order to overcome the challenges faced by e-governance, they have to apply training of personnel.Other strategies include city twinning as confirmed by 20 % of respondents. Comparatively in Rutsiro district 36 % citedas city-twinningand 16% represent training of personnel.

Table 15 shows some of the strategies that were mostlysuggested by respondents in order to try to overcome some challenges being faced by local authorities to implement and use e-

governance to improve service delivery. These strategies can be a solution to the challenges which the local authority is currently facing in implementing and use e-governance.

The findings of the study were similar with the other findings in the literature where the strategies presented were city-twinning, public-private partnerships and training of persons as reported by Brewer, (2002) and Matimati, (2015). Therefore, Musanze and Rutsiro district can also adopt various strategies which can help to combat the challenges being faced such as city twinning, public –private partnerships and training of personnel.

The comparison was based on assessing the level of ICTs use in those districts in improving service delivery. From the findings, it was noted that the use of e-governance is different from one district to other because of different adaptation of ICT policies as well as different issues mentioned by respondents.

These districts could be assisted in developing the use of e-governance and local government's efforts to deliver improved services to their citizens should be undertaken in Musanze and Rutsiro because, the use of e-governance system in the above districts was far less developed.

There was poor service delivery to the people and in some cases the public demonstrated against that. It was within that context that MINALOC had to source some funds and try to implement e-governance system in those districts so as to improve and do away with poor service delivery to better improve delivery of services to all to all citizens at all levels

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMENDATIONS

5.1. Introduction

This chapter represents the summary of findings of the research using the objectives of the research, it also covers, the conclusion and suggestions of all findings, and also future areas of the study

5.2. Summary of findings

Generally, the main objective of the study was to assessthe role of e-governance in improving service delivery in Rwanda.

Regarding to the role of e-governance in improving service delivery in Musanze and Rutsiro districts. From Table 7, indicates that in Musanze district, 44 % of the respondents said service delivery has been improved through e-governance ,32% of the respondents had access to information ,24% of the respondents said there was improvement of service quality and user satisfaction due to e-governance. Comparatively in Rutsiro district,24% of the respondents said e-governance improved relationship between the local authority and citizens, 16 % of the respondents noted that it enhanced transparency and accountability of the local authorities and32% of the respondents noted improving service delivery through e-governance and last were 28% noted improve access of information

Regarding to the challenges faced by Musanze and Rutsiro districts in using e-governance to improve service delivery. From Table 11, about 100% of respondents in Musanze confirmed that shortage of machines is the most difficulty challenge Musanze faces. Comparatively in Rutsiro district faced the challenges of the shortage of finance with 100% as confirmed by the respondents.

Regarding to the strategies used to overcome challenges faced by Musanze and Rutsiro districts in using e- governance. Considering Table 15, 48% of respondents confirmed that engagement and collaboration with public-private partnership is a strategy to overcome tochallenges in Musanze and Rutsiro district. About 32 % of respondents said that in order to overcome the challenges faced by e-governance, they have to apply training of personnel.

Other strategies include city twinning as confirmed by 20 % of respondents. Comparatively in Rutsiro district 36 % cited as city twinning and 16% represent training of personnel

5.3. Conclusion

In conclusion, the researcher concluded that, the use of e-governance by local authorities contributes a lot in improving service delivery because through e-governance people can get online services, participate in decision making, getting different services such as birth certificate, tax payment and renew business license. But there are some challenges which hinder the use of e-governance and its functions like shortage of finance, shortage of machine and lack of skilled personnel as well as infrastructure development. On the other hand, districts can adopt various strategies which can help to combat the challenges such as City twinning, public-private partnerships and training of personnel, the research established that more could be done.

5.4. Recommendations

The following recommendations were provided:

Districts:

- District should strengthen public private partnership and city twinning as way to acquire financial and other resources
- District should create a framework that promote the availability of ICTs in all its departments through appropriate policy intervention
- Districts should provide training programs in ICT skills in order to expand the use of e governance.

To government:

- To improve e-government in local entities
- To increase the budgets of district as way to encourage the use of ICT in improving service delivery to the public
- Government should increase numbers of machines to the districts

- Training for staff and public on the use of ICTs should be done through workshops so that they can gain deep understanding on the use of e-governance

To population:

- Awareness or education that takes place at the community level regarding to the use of and benefits of on e-governance.
- Having participative method in their implementation

For further researcher:

The researcher looks forward to wider scope that this because this study was limited by financial resources and time. Further studies are suggested to be conducted on the following topics:

- The role of e-governance in addressing the issues of corruption in Rwanda.
- The Contribution of the e-commerce to the economic development of Rwanda

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR THE RESPONDENTS /MUSANZE

In the objective of conducting scientific research required to any student who finalize in UR in Master of Social Sciences in Local Governance studies, the researcher preferred to conduct a research on “**The use of e-governance by local authorities to improve service delivery in Rwanda: A comparative study of Musanze and Rutsiro districts.**” The researcher assures you that you may answer these questions without complaints because it is not a kind of investigation, so, there are no hidden consequences.

INSTRUCTIONS

- Please, put the sign X in the box before the response of your choice. For the open questions, explain widely in the reserve place but if the place is not sufficient you may use the verso page and remember to mention the number of the question that you are answering

TWAHIRWA Abdoulatif

Section A. Respondent's identification

1. Sex:

- a) Male ☐
- b) Female ☐

2. Age

- a) 21-30 years old ☐
- b) 31-40 years old ☐
- c) 41-50 years old ☐
- d) 51-60 years old ☐
- e) More than 60 years old ☐

4. Marital status:

- a) Single ☐
- b) Married ☐
- c) Divorced ☐
- d) Widow ☐

5. Level of education:

Primary:

Secondary:

University:

Section B: Question set to verify the hypotheses

1. Are you aware on e-governance and its use to improve service delivery in Musanze district?

a. Yes

b. Not

2. What is the role of e-government in improving service delivery in Musanze district?

a. Improving service delivery through e-governance

b. Improved access to information

c. Improvement of service quality and user satisfaction

3. Which among the following improved most due to the use of e-government in Musanze districts?

a. Improvement in tax payment

b. Renewal of driving license

c. Birth certificate

d. Marriage of certificate

4. To what extent do you appreciate service delivery in Musanze District?

a. High

b. Very high

c. Low

d. Very low

5. Do you agree that better service is caused mainly by e-governance (the way you access services)?

a. Strong agree

b. Agree

c. Disagree

d. strong disagree

6.What are the challengesfaced by the local authorities in the use of e-governance to improve service delivery in Musanze district.

a. Lack of skilled personnel

b. Shortages of machines

c. Shortage of finance

d. lack of support from the central government

7.Do you face a challenge related to the shortage of machine in Musanze district?

a. Strong agree

b. Agree

c. Disagree

d. Strong disagree

8.Do you face the challenges of Lack of skilled personnel in Musanze district?

a.Strong agree

b. Agree

9. Do you have a challenges related to the shortage of finance in your district?

a. Yes

b. No

10. What are the strategies undertaken in order to overcome the challenges faced by local authority?

a. Engagement and collaboration with public-private partnerships

b. Training of personnel

c. Improved collaboration

d. City twinning

11.To what extent do you think the engagement and collaboration contributes to online service delivery in Musanze district?

a. Low

b. Very low

c. High

d. Very high

12.To what extent do you think the training of personnel contributes on service delivery in Musanze district?

- a. Low
- b. Very low
- c. High
- d. Very high

13.To what extent do you think city twinning contributes on service delivery in Musanze district?

- a. Low
- b. Very low
- c. High
- d. Very high

APPENDIX B: INTERVIEW GUIDE FOR MUSANZE

1. What is the role of e-government in improving service delivery in Musanze district?
2. What domains improved due to the use of e-government in Musanze District?
3. What kind of services delivery thanks to to the application of e-governance in Musanze district?
4. What are the challenges faced by the local authorities in the use of e-governance to improve service delivery in Musanze district.
5. What are the strategies undertaken in order to overcome the challenges faced by local authority?

APPENDIX B: QUESTIONNAIRE FOR THE RESPONDENTS OF RUTSIRO

Dear respondents,

In the aim of fulfillment of the requirement of completing Master of Social Sciences in Local Governance studies, I have prepared the questionnaire to help me collecting ideas and opinions on “**The use of e-governance by local authorities to improve service delivery in Rwanda: A comparative study of Musanze and Rutsiro districts.**” I make sure you that your ideas are confidential and will be used only for the academic purpose. I am looking forward with your sincere willingness to reply it as soon as possible and we will be always grateful to your contribution in realization of this work.

INSTRUCTIONS

- Answer freely to this question and any responses are considerable.
- Put (V) sign in the box corresponding to your choice
- For other types of questions, give answers in your own words
- Your answer will be kept under strict secret.

TWAHIRWA Abdoulatif

Section A. Respondent’s identification

1. Sex:

a) Male ☐

b) Female ☐

2. Age

f) 21-30 years old ☐

g) 31-40 years old ☐

h) 41-50 years old ☐

i) 51-60 years old ☐

j) More than 60 years old ☐

4. Marital status:

- a) Single ☐
- b) Married ☐
- c) Divorced ☐
- d) Widow ☐

5. Occupation:

Public sector agent ☐

Private sector agent ☐

6. Level of education:

Primary: ☐

Secondary: ☐

University: ☐

Section B: Question set to verify the hypotheses**1.Are you aware on e-governance and its use to improve service delivery in Rutsiro district?**

- a. yes ☐
- b. No ☐

2.What is the role of e-government in improving service delivery in Rutsiro district?

- d. Improving service delivery through e-governance ☐
- e. Improved access to information ☐
- f. Improvement of service quality and user satisfaction ☐

3.Which among the following improved most due to the use of e-government in Rutsiro districts?

- a. Improvement in tax payment ☐
- b. Renewal of driving license ☐
- c. Birth certificate ☐
- d. Marriage of certificate ☐

4.To what extent do you appreciate service delivery in Rutsiro District?

- a. High
- b. Very high
- c. Low
- d. Very low

5. Do you agree that better service is caused mainly by e-governance (the way you access services)?'

- a. Strong agree
- b. Agree
- c. Disagree
- d. Strong disagree

6.What are the challengesfaced by the local authorities in the use of e-governance to improve service delivery in Rutsiro district?

- a. Lack of skilled personnel
- b. Shortages of machines
- c. Shortage of finance
- d. lack of support from the central government

7. Do you face a challenge related to the shortage of machine in Rutsiro District?

- a. Strong agree
- b. Agree
- c. Disagree
- d. Strong disagree

8. Do you face the challenges of lack of skilled personnel in Rutsiro district?

- a.Strong agree
- b. Agree

9. Do you have a challenges related to the shortage of finance in your district?

- a. Yes
- b. No

10. What are the strategies undertaken in order to overcome the challenges faced by local authority?

- e. Engagement and collaboration with public-private partnerships
- f. Training of personnel
- g. Improved collaboration
- h. Increasing awareness to the public on the use and benefits of E-Governance system
- i. City twinning

11. To what extent do you think the engagement and collaboration contributes to online service delivery in Rutsiro district?

- a. Low
- b. Very low
- c. High
- d. Very high

12. To what extent do you think the training of personnel contributes on service delivery in Rutsiro district?

- a. Low
- b. Very low
- c. High
- d. Very high

13. To what extent do you think city twinning contributes on service delivery in Rutsiro district?

- a. Low
- b. Very low
- c. High
- d. Very high

APPENDIX B: INTERVIEW GUIDE FOR RUTSIRO

6. What is the role of e-government in improving service delivery in Rutsiro district?
7. What domains improved due to the use of e-government in Rutsiro District?
8. What kind of services delivery thanks to the application of e-governance in Rutsiro district?
9. What are the challenges faced by the local authorities in the use of e-governance to improve service delivery in Rutsiro district.
10. What are the strategies undertaken in order to overcome the challenges faced by local authority?