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**ADOPTION AND USE OF INFORMATION AND COMMUNICATIONS
TECHNOLOGY IN RURAL COUNCILS: A CASE OF NYANGA RURAL
DISTRICT COUNCIL**

BY

R133905Y

***SUBMITTED TO THE MIDLANDS STATE UNIVERSITY IN PARTIAL FULFILMENT
OF THE BACHELOR OF COMMERCE HONOURS DEGREE IN BUSINESS
MANAGEMENT.***

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APPROVAL FORM

**ADOPTION AND USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY IN
RURAL COUNCILS: A CASE OF NYANGA RURAL DISTRICT COUNCIL**

1. TO BE COMPLETED BY THE SUPERVISOR

This dissertation is suitable for submission to the faculty. It has been checked for conformity with the faculty guidelines.

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DECLARATION

I *R133905Y* do hereby declare to the best of my knowledge that the information in this research paper is my original work except where sources have been acknowledged. This work has never been submitted to this or any institution for a higher academic award.

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DEDICATIONS

This project is dedicated to my family, my mother, father and my siblings for their unwavering faith in my ability, their support and love.

ACKNOWLEDGEMENTS

First and foremost, I would like to express my profound gratitude and praise to the Almighty God, who has given me strength and spiritual direction to conduct this research and has seen me through to the end of this study.

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Last but not least, I would like to thank Midlands State University for allowing me to attain this academic status, their dedication in teaching me and giving me an opportunity to produce this research paper.

ABSTRACT

The rise and rapid advances in information and communication technologies (ICTs) has been at the centre of global socio-economic revolutions. The use of these ICTs has become a vital component for business success in developed countries. ICTs affect the performance, growth, expansion and services delivery of any business or organization. However Zimbabwe is a developing country and as such lags behind in terms of ICT adoption. This study focused on ICT adoption and use in Rural Councils, using Nyanga Rural District Council as a case study. The research used mainly quantitative methodology were interviews and questionnaires were used to gather relevant information to the study. Various authorities were used as a guide to the study. The technology acceptance model (TAM) proposed that ICT adoption is mainly influence by perceived ease of use and perceived usefulness. The results suggest that perceived usefulness is more important in determining adoption of ICTs, that is, if the management of the organisation discover how ICTs can help their business they are more inclined to adopt it. However the study also revealed a number of factors that hinder the Rural Council from adopting ICTs that include the lack of training and the inability to use the technologies among others. This study also revealed the influence the semi-adoptive state was having on their clientele. The study recommended various ways that the council can communicate with their customers and other ways the council can integrate information technologies in their operations.

Table of Contents

RELEASE FORM.....	ii
APPROVAL FORM.....	iii
DECLARATION	iv
DEDICATIONS	v
ACKNOWLEDGEMENTS	vi
ABSTRACT	vii
Table of Contents	viii
List of Tables	xi
List of Figures	xi
List of Appendices	xi
List of acronyms	xii
CHAPTER 1	1
1.0 Introduction.....	1
1.1 Background to the Study.....	1
1.2 Statement of the problem.....	3
1.3 Research objectives.....	3
1.4 Research questions.....	3
1.5 Research assumptions.....	4
1.6 Significance of the study.....	4
1.7 Delimitation.....	5
1.8 Limitations.....	5
1.9 Definition of key terms.....	6
1.10 Chapter summary.....	6
CHAPTER 2	7
2.0 Introduction.....	7
2.1 Rural District Councils.....	7
2.2 Theoretical framework.....	8
2.3 Zimbabwe’s ICT position.....	11
2.4 Barriers to ICT adoption.....	12

2.5	Relationship between ICT Adoption and business success	15
2.6	Potential Use of ICTs in rural councils.....	16
2.7	Strategies to decrease barriers to ICTs adoption.....	19
2.8	Wireless technology.....	20
2.9	Wireless Networks	21
2.10	Wireless Fidelity and Wi-Fi.....	21
2.11	The Wireless Revolution	22
2.12	Chapter Summary	22
CHAPTER 3	23
3.0	Introduction	23
3.1	Research Design	23
3.2	Population.....	24
3.3	Sample size.....	24
3.4	Sampling.....	26
3.5	Sources of Data	27
3.6	Data Collection Instruments	27
3.7	Validity and reliability	29
3.8	Data collection procedure.....	29
3.9	Ethical considerations	30
3.10	Data presentation and analysis.....	30
3.11	Chapter Summary	30
4.0	Introduction	31
4.1	Response rate	31
4.2	Employee and Councilor’s Questionnaire.....	32
4.2.1	Are there problems with the uptake of ICTs in rural councils?	32
4.2.2	What are the issues restricting ICT usage in rural councils?.....	32
4.2.3	What are the consequences of not using ICT?	34
4.2.4	Findings on the business computer systems that the employees and management at NRDC are able to implement	35
4.3	Customer’s Questionnaire	35
4.3.1	Socio-demographic Data.....	35
4.3.2	Age of the Respondents.....	36
4.3.3	Place of residence of the respondents	36

4.3.4	What information technologies do you have access to?.....	37
4.3.5	What is your preferred method of payment?	37
4.3.6	Respondents' opinion of NRDC's service processes and provision	38
4.3.7	Respondents' mode of communication with NRDC	39
4.4	Interview responses	39
4.5	Chapter Summary	40
CHAPTER 5	41
5.0	Introduction	41
5.1	Summary	41
5.2	Summary of major findings.....	41
5.3	Addressing the research questions.....	42
5.4	Conclusion.....	44
5.5	Recommendations	44
5.6	Suggested areas for future study.....	45
REFERENCE LIST	46

List of Tables

Table 1: Defining sample size from the population.....	24
Table 2: Respondents composition.....	25
Table 3: Response rate.....	31
Table 4: Responses to whether or not there are problems to ICT adoption in rural council	32
Table 5: Responses on the business computer systems the employees are familiar with.....	35
Table 6: Gender of respondents	35
Table 7: Age of respondents	36
Table 8: Showing residence of the respondents.....	36
Table 9: Showing preferences and opinions of the customers on NRDC’s ICT status	38
Table 10: Showing customers’ mode of communication with NRDC	39

List of Figures

Figure 1: The Technology Acceptance Model.....	9
Figure 2: Theory of Reasoned Action.....	10
Figure 3: The Theory of Planned Behavior	11
Figure 4: Barriers to ICT Adoption	13
Figure 5: Impact of ICT adoption on the business organisation.....	18
Figure 6: Barriers to ICT adoption at NRDC.....	32
Figure 7: Responses on consequences of not using ICT in NRDC	34
Figure 8: Responses to the information technologies the customers have access to	37
Figure 9: Preferred mode of payment when transacting.....	37

List of Appendices

Appendix A: Employees Questionnaire.....	50
Appendix B: Customers Questionnaire	51
Appendix C: Interview questions guide.....	52
Appendix D: Permission Form	53

List of acronyms

ATM – Automated Teller Machine

CBD – Central Business District

CEO – Chief Executive Officer

GCR – Global Competitiveness Report

GCI – Global Competitiveness Index

ICT -Information and communication technologies

IT -Information Technology

ITU – International Telecommunications Union

NRDC – Nyanga Rural District Council

POS – Point of Sale

SMEs – small to medium-sized enterprises

WEF – World Economic Foru

CHAPTER 1

INTRODUCTION

1.0 Introduction

Due to rapid technological advances, the possibility of rural businesses' success is getting increasingly uncertain. The role of technology on socio-economic development has escalated in recent years which has rendered the old ways of doing business obsolete. Productivity can be attributed to IT as it can not only automate existing processes but can initiate required organizational changes. Although various attempts have been made by the Nyanga Rural District Council to adopt this new way of operating they seem to be lagging behind and are at a disadvantage as a result. This chapter concentrates on the background of the study, gives a brief enlightenment to the persistent problem, the research questions, states the purpose and justifies the research, it raises assumptions of the study, gives the limitations and delimitations, the key terms are defined and the planned outline of the research.

1.1 Background to the Study

In a time that is overrun by technology, Zimbabwe being a developing country is always lagging behind in technological innovations that are changing business processes and lessening the burden for their company. However, the issue of limited resources, economic difficulties and climatic changes are affecting the level of affordable taxes and tariffs for the council's debtors. Without necessary funds in can be a burden for the council to achieve its goals.

According to Cypher and Dietz (2008) automated changes in business diminish expenses, expands profitable efficiency, rations society's assets and also enhances the prospect for a higher expectation for everyday life. This means that restrained technological advancements result in stunted economic growth. Paluch (2014), states that regardless of the fast progress of automated

services and its prospective benefits, attaining client's acceptance remains an obstacle to organisations. In rural areas where information technologies are not readily accepted the chances of organisations adopting them are low as they seek to accommodate their somewhat backward clientele. Zimbabwe has been struggling to enter the ICT world since 2000, however they have faced many difficulties due to it being a developing country, Cloetes et al (2012). Zinguze (2009) states that it is not certain whether these failures to adopt are as a result of legislature policy, constrained resources or corporate management. Organisations in different sectors in the economy are presently exploiting information technology, not only for reducing costs and enhancing productivity, but also for providing improved services to clients, Ashrati and Murtaza (2008).

SMEs in developing countries are unable to gain some of the rewards of using information technology because they lack the necessary monetary resources, they have inadequate infrastructure, the absence of the requisite IT skills, the inimical government policies and legislature and the complications arising from rapid globalization which are global competition and access to new markets, Mbuyisa and Leonard (2015). Adebayo et al (2013), realized that the main issues that affect ICT adoption in Nigerian SMEs are expenses, resources, infrastructure, expertise and training, administrative support and government's attitude towards ICT. These factors can also apply to rural councils as in a way they share certain similarities. Ladokuni et al (2013) conducted a study in Nigeria which confirmed the fact that cost, resources, infrastructure, expertise and training, administrative support and government support attitude predict information technology acceptance.

Nyanga rural district council covers an area of 5897.82km most of which is divided under Natural region 1 and 2, over 69% of the population live in the communal areas. This raises an issue that above half of the population in Nyanga are scarcely aware of the benefits of information technology. The ability to operate computers and use the internet has become progressively significant in order to stay afloat in this new age of conducting business, however not every organisation can acquire this technology, Nyanga Rural District Council has been operational since 1992 and while the rest of the country and world has adopted new technological innovations to make work easier and more accurate, NRDC seems to be vastly lagging behind. Some printers still being used are outdated to the extent that they are costly to repair. Their computers required maintenance constantly and are slow to process.

A variety of studies on ICT adoption have mainly been focused on its adoption in developing countries and SMEs, fewer have looked into ICT adoption in government entities but even then they are just focusing on e-government. In Zimbabwe researches about ICT adoption were done in different sectors and from different perspectives, that is, Dube and Gumbo (2016) looked into the adoption and use of ICTs in Zimbabwean supermarkets, Mupfiga (2015) focused on ICT adoption in the tourism and hospitality sector. Other researches such as the one done by Tsokota T and Von Solms R (2013), were studies in general about the adoption of ICT at a country level. This reveals a key gap in that the retail sector was mostly targeted by other researchers, therefore this study seeks to cover ICT adoption in rural councils specifically NRDC.

1.2 Statement of the problem

NRDC has been experiencing bad publicity and reputation due to its inability to deliver services to the public effectively. Their ineffective and inadequate technology has made for the consumers to lose confidence in them, and their inability to perform their work with perfection and has in turn led to considerable losses for example in their court cases due to insufficient information and bad record keeping. Therefore the purpose of this study is to find out what is keeping the council from adopting this new technology and the extent to which it has damaged the council's finances and image.

1.3 Research objectives

- To determine the effect of ICT usage on revenue.
- To examine factors that hinder ICT adoption in rural businesses.
- To establish options that may enhance integration of ICT in the council.

1.4 Research questions

- What revenue collection opportunities are associated with ICT in councils?
- What challenges does NRDC face in adopting ICT?
- How can ICT adoption and integration be accelerated within the council?

1.5 Research assumptions

- Respondents will be truthful in answering the questions concerning the issue at hand.
- The chosen sample will be a genuine reflection of the complete population under consideration.

1.6 Significance of the study

1.2.1 To the student/researcher

It is in partial fulfilment of the Bachelor of Commerce Honors Degree in Business Management at Midlands State University. The investigation equips the researcher with analytical skills and broadens the individual's knowledge in conducting research and shades light on the use of information technology in rural businesses. The researcher would also be able to link what present literature says about the topic at hand. It acts as a platform for progressive study to the inspired student.

1.6.2 To Midlands State University

The institution will be used for reference material by future academics for their researches. The research can boost the reputation of the university by producing well learned and qualified individuals through producing a well-researched project. The results of the study can be used for further investigations or merely to fortify conclusions by other researchers.

1.6.3 To the customer

They will benefit from improved service delivery. Also as it is obvious that those customers are the ones who receive the services provided they are assured to an extent of the quality provided.

1.6.4 To the body of knowledge

It will give a chance to test out certain theories given on the topic in the real world. It can also be a way to solidify or debunk certain models of ICT adoption and it is a growth of the current body

of knowledge on the topic in question. As there is no record of such a study being performed in rural councils in Zimbabwe, it will add value and literature on the topic at hand.

1.7 Delimitation

1.7.1 Time

The research is focused on the period from the year 2011 to 2016 and the respondents will be NRDC customers, employees and management.

1.7.2 Geography

The research will be focused on Nyanga Rural District.

1.7.3 Literature

Conceptually the study focuses on the challenges that NRDC faces in adopting ICTs, ways to minimize those challenges and the influence they might have on the performance and revenue of the council.

1.7.4 Methodology

The research will be quantitative in nature, the researcher will use most of the employees of NRDC to get a more accurate result

1.8 Limitations

- Privacy protocol; there was information that the company employees knew but was not allowed to be disclosed therefore information that might have been useful to this study was not fully exploited.
- NRDC is a small council with a finite number of employees which reduced the variance of opinions on the subject matter; which carried a risk or bias.
- NRDC's operations are not posted on its website, the research had to be on site to gather information required.

However the researcher was able to carry out the study on site, conduct individual interviews to dissipate the notion of sharing answers and seek approval to exploit all information if relevant to this study.

1.9 Definition of key terms

Digital divide – refers to the gap between demographics and regions that have access to modern information technology and those that do not have or have restricted access

District council – is the local governing body of a district.

ICT –refers to technologies that provide access to information through telecommunications.

IT – is the broad subject concerned with all aspects of managing and processing information. It refers to anything related to computing technology, such as hardware, software, the internet, or the people that work with these technologies

Open Innovation –is the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation, respectively Chesbrough (2003).

Perceived ease of use – the degree to which an individual believes that using a particular system would be free of physical and mental effort, Davis (1985)

Perceived usefulness – the degree to which an individual believes that using a particular system would enhance their job performance, Davis (1985).

Rural area – is a geographical area that is located outside towns and cities.

1.10 Chapter summary

This chapter is aimed at introducing the research by providing background information that give validation for performing the research. It consists the background to NRDC's situation, research objectives and questions that will be acting as a guideline for the study. This chapter consists of

the limitations and delimitations of the study, the importance and justification of it. This chapter is therefore a foundation as it lays the course with which the next chapter will follow.

CHAPTER 2 LITERATURE REVIEW

2.0 Introduction

The degree of internationalization of the firm, use of technology and the extent of competition are important factors explaining firm level use of ICT, Cirera et al (2016). They believe that ICT usage in organizations is an important motivator of product, process and organizational innovation in developing countries. Okechi and Kepegham (2013) suggest that ICT knowledge or skills of the managers or owners of SMEs will certainly increase the opportunity of ICT adoption and use in the business. The purpose of this review of related works is to critique and compare what other scholars deem to be issues that affect or hinder ICT adoption in rural businesses. The researcher goes on to review literature on the potential uses of ICTs for rural councils and other issues. This section also provides information on the roles of rural councils in Zimbabwe and the current state of ICT in the country.

2.1 Rural District Councils

Councils in Zimbabwe are divided into wards. According to the Rural Councils Act Chapter 29:8 and 139, wards refers to a zone into which a council area is divided or redivided according to the act itself. Nyanga Rural Council caters for 31 wards which are mostly farming setups and those wards are made up of at least three villages each. Rural councils are governed by councilors, Nyanga has 31 councilors, one for each ward. However councils practice separation of functions which means councilors are not intricate in the everyday running of the council. The day to day operations of the council are run by the Chief executive officer whilst policies are made and approved by the board of councilors.

2.1.2 The role of RDCs in their jurisdiction

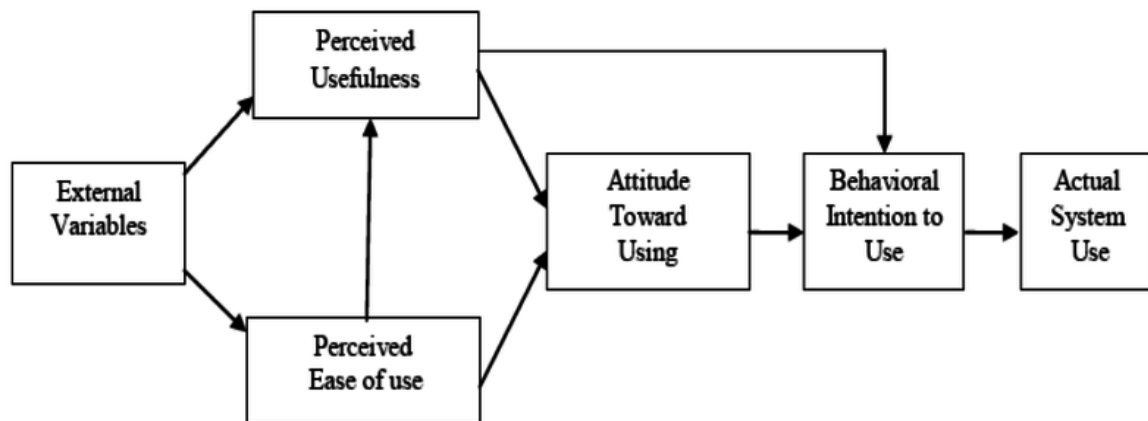
According to Rural Councils Act chapter 29:13, in its first schedule, rural councils have up to 64 powers, which are basically what councils are supposed to do or provide for the community. These include acquisition, maintenance, development and disposal of property also to provide and maintain the district's recreational facilities, show grounds, trees and open spaces. RDCs conserve the natural resources of the district, prevent or extinguish bush fires and provide and repair fencing for public or common lands like town halls. RDCs are mandated to provide services to improve agriculture, forestry, horticulture and livestock.

RDCs also provide and maintain roads, bridges, dams, water courses, furrows and culverts, they also provide parking spaces for motor vehicles and they can grant omnibuses permission to carry passengers and parcels. RDCs are authorized to arrange for public lighting in the form of street lights, they maintain, construct, alter and keep clean drains, sewers inside and out of the council. They are supposed to prevent pollution in their districts be it water, air or otherwise. They are required to provide and run crèches, schools and other educational institutions. The RDCs are required to provide and operate public libraries, museums, public halls and theatres. They are also supposed to arrange for hospitals, clinics and dispensaries. RDCs are responsible for pegging and inspecting sites for schools, clinics, shops markets and other buildings. They also approve building plans and inspect construction of structures.

2.2 Theoretical framework

In the adoption approach, with the aim of justifying the adoption choices of users collective and individual administrative theories are applied. Models mainly referred to include the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Theory of Reasoned Action (TRA). In the 1970's, when technology needs were at a massive increase, there were reports of raising failures of system adoptions in organisations, this peaked the interests of many researchers in terms of predicting system use. In 1985, Davis Fred came up with the Technology Acceptance Model (TAM)

Figure 1: The Technology Acceptance Model



Source: Marina (2009)

TAM was propounded to ascertain if attitude, perceived ease of use and perceived usefulness influence usage of technology within the business. According to the TAM, perceived ease of use and perceived usefulness are the chief aspects that determine if technology is readily acceptable. It states that even though those are the two main factors they are affected by certain external variables like user traits and organizational elements. Attitudes towards using therefore act as a mediator and gauge on whether or not the ICT will be accepted. Attitude therefore, determines the willingness or unwillingness of individuals to accept the ICT. TAM is at times faulted for not taking into account external variables such as economic influences, competitors' effect, suppliers and other variables in its investigation of the decision-making elements.

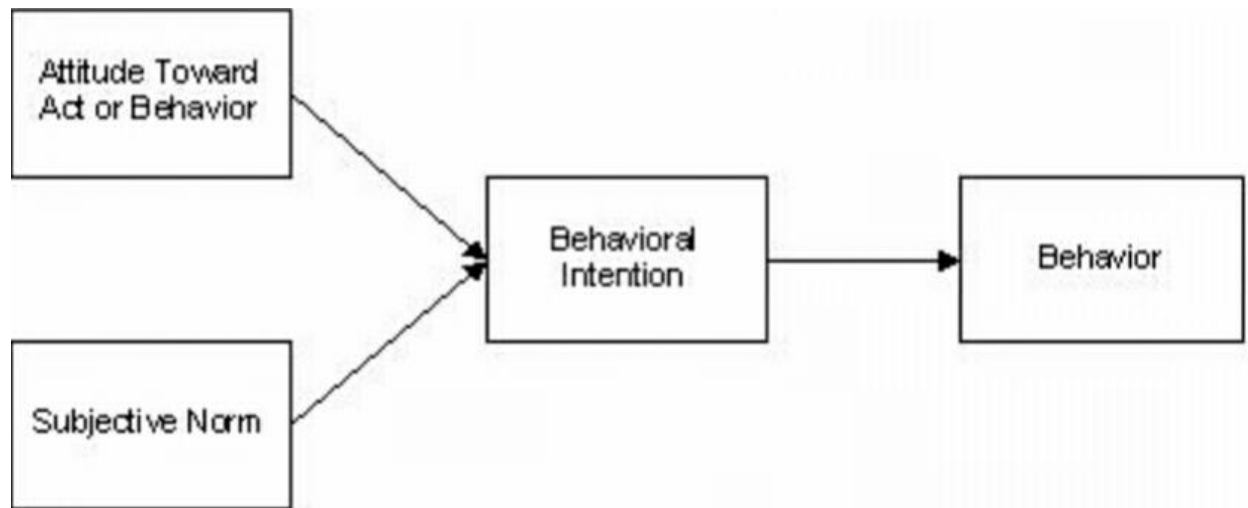
2.2.1 Rural Technology Acceptance Model (RuTAM)

This is an extension of the TAM but with its main focus in the rural settings. The aim is to be able to apply the concept of TAM in rural businesses. According to Johan JC et al (2015) this model combines TAM with several variables namely; facilitating conditions, technology service attributes, social influence, demographic factors and individual factors. A model like this can be applied to NRDC to inquire as to whether or not those factors are responsible for their reluctance in ICT adoption.

2.2.2 Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA), which was introduced in 1975 and 1980 by Fishbein and Ajzen respectively, it was used to tackle some of TAM's weaknesses. The theory proposes that a person's actions are decided by their intention to achieve the actions and that this intention is, in turn, attributed to the attitude toward the action and the subjective norm. TRA advocates that stronger intentions result in greater effort to achieve the behavior, which in turn intensifies the possibility for the behavior to be performed.

Figure 2: Theory of Reasoned Action

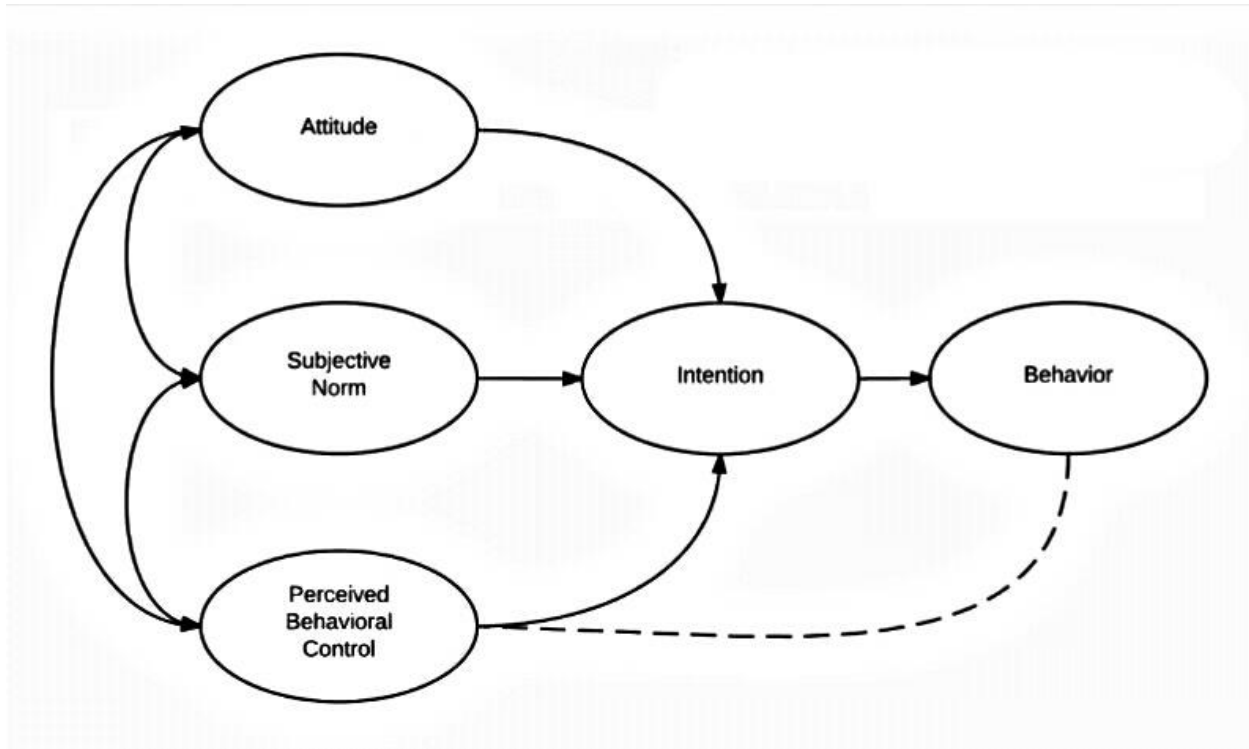


Source: Fishbein and Ajzen (2010)

2.2.3 Theory of Planned Behavior (TPB)

TPB is an addition of the TRA by refining the predictive power of the TRA through perceived behavioral control. It deals with situations where in which the individual does not have any control of their behavior Manuelli et al (2007). This theory has been used to understand people’s behavior in several fields.

Figure 3: The Theory of Planned Behavior



Source: Ajzen (1991)

2.3 Zimbabwe’s ICT position

The country’s Global Competitiveness Index (GCI) for the year 2015 was ranked at 125th position out of 140 countries, which is considerably low even for a developing country. According to the World Economic Forum (2015) Zimbabwe’s overall technological readiness was measured at 2.8 out of 5 which is an improvement from 2013’s 2 out of 5. The WEF rates technology adoption at 3.7 on a scale of 5 which is 1.2 points above average showing much promise for the Zimbabwean economy at being able to follow technological advancements relatively quicker. The country’s firm level technology absorption and availability of latest technology is rated at 4.1 which is impressive however this might only be applicable to CBD based firms and not rural organizations.

The WEF also report that internet users in Zimbabwe are at 19.9% of the total population which is significantly low.

According to the Zimbabwe National Policy for ICT (2015) the point to which all industries and organisations can incorporate ICTs in their processes hinges on the ability of the ICT sector to provide the required ICT in a cost effective and sustainable way. Zimbabwe has about 72 companies that provide or cater for businesses' ICT needs and most of them were formed within the last 5 years which shows a growing demand for quality ICT services and a lot of people willing to supply for those needs. They go on to say that Zimbabwe's ICT sector is characterized by multiplicity of players, which happens to be true and leaves no room for specialization on a particular service by any of the companies.

Minister Chamisa (2011) strives to renovate the country's ICT sector and way of doing business by 2015. The government had already completed a \$16million optic fibre link to quicken the flow of information. In 2012 Chamisa confirmed that all ministries were now online and that the main goal was that the whole country be transformed into a knowledge based society. Nevertheless there is evidence that suggests otherwise to the claim of the country as a whole having taken the technology highway, especially in rural areas where ICT is rarely used even in schools and clinics.

2.4 Barriers to ICT adoption

There are no clear procedures to ICT assimilation in business processes and organisations continue to use outdated manual ways of business in an attempt to remain competitive and in their customers' good graces, Tsokota and Solms (2013). It is believed that the reason why ICT adoption is being a lengthy process is because the customers themselves do not wish to change from what they are familiarized with. With the exception of a few services, Zimbabwean citizens are used to waiting in lines and obtaining multiple documents to accomplish a single transaction. Conversely according to the GCR (2015) internet users in Zimbabwe are 19.9% and rising which contradicts the fact that individuals do not want technological change in organisations.

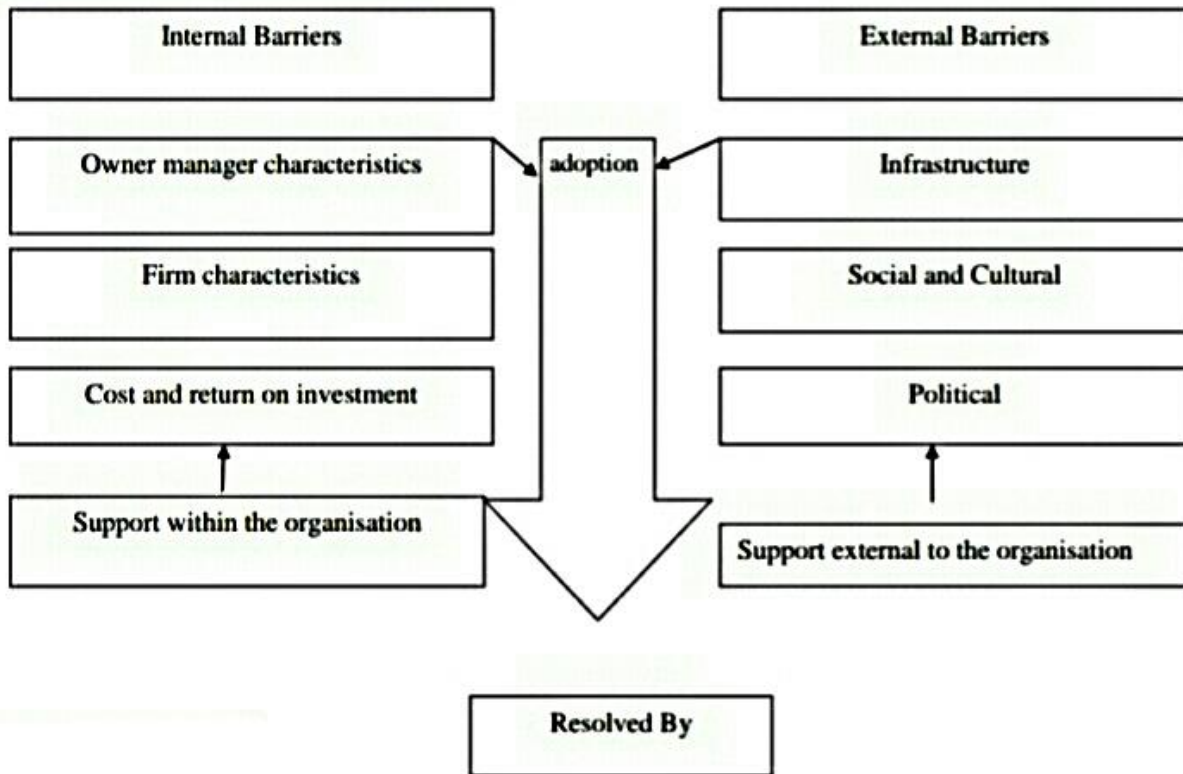
According to the Zimbabwe National Policy for ICT (2015) the ICT adoption in Zimbabwe is hindered by inadequate ICT skills. There is a shortage of ICT skilled individuals that can effectively implement necessary changes in companies in Zimbabwe. The absence of understanding of how to use technology coupled with low computer literacy are aspects reducing

ICT adoption, Manuere et al (2012). The management's lack of awareness on information technology and its apparent benefits results in the company not employing said technology because management does not deem it necessary.

Issues that affect ICT adoption in developing countries have been acknowledged as inadequate ICT infrastructure, absence of cyber security framework, resistance to organizational changes by employees, the inability to apply ICT in relation to customers and suppliers, insufficient financial resources, the organizational management style, Kapurubandara and Lawson (2006). Inadequate communications infrastructure is another challenge the ICT adoption in Zimbabwe, according to the Zimbabwe National Policy for ICT (2015) broadband average is still significantly low in rural areas whilst it is rising in the urban areas which therefore is widening the rural-urban digital divide against the principle of equitable access.

According to Chamisa (2012) inadequate resources impede development in regards to ICT, even if individuals are eager to progress in terms of their operations recourses tend to limit those initiatives. He goes on to state that unprofitable conflicts, assaults and discouragements delay progress and in certain instances halt it as individuals be it in that the top management cannot reach a consensus on how to approach ICT in a beneficial manner.

Figure 4: Barriers to ICT Adoption



Source: Mkuti (2000) as cited by Manuere, Gwangwava and Gutu (2012)

Ladokun et al (2013) conducted a research on the factors that affect ICT adoption in Nigerian SMEs, their research revealed that skills and training, infrastructure, government policies, investment cost, management support, maintenance cost and security level are the issues that influence ICT adoption by SMEs. However their study placed emphasis on lack of infrastructure and deemed it to be the main constraint to ICT adoption seconded by all the other factors. Another study by Agboh (2015) on ICT adoption drivers and challenges in Ghana, after necessary data collection and analysis was conducted revealed that there are six chief barriers to ICT adoption amidst SMEs in the Accra Metropolis namely availability of financial resources to invest in ICTs, poor infrastructure, lack of skilled personnel to operate the ICT, lack of time to implement ICTs, unperceived benefits of ICTs, and the high level of intricacy associated with the implementation of ICT. Matimati and Rajah (2015) discovered that the challenges that local authorities are facing in trying to implement e-governance in Zimbabwean councils include shortage of financial resources, skilled labour, machinery and lack of support from the central government

Dube and Gumbo (2016) conducted a research on the adoption and use of ICTs in Zimbabwean supermarkets. Their study mainly focused on ATMs and POS as methods of payment in the supermarkets. They made use of questionnaires and interviews to collect data and came up with the results that adoption was still at 20% for customers but that all supermarkets had implemented the use of POS, however they believed a rise in ATMs and POS usage was imminent due to the current cash crisis in Zimbabwe. This may apply to rural councils, however they are in different sectors of the economy. Mupfiga (2015) carried out a study on the adoption of ICTs in the tourism and hospitality sector in Zimbabwe. His inquiry revealed that all hotels may be equip with ICTs however the technology is superseded and not functional and that the software packages they possessed are not efficient enough.

2.5 Relationship between ICT Adoption and business success

The benefits of ICT have long been stated for companies in varied operations be it manufacturing or service industry of developed or developing countries. ITU (2006) implied that ICTs have the major constructive influence in unification with other changes in the organization in question be it garnering new ICT expertise, training, operational alterations within the business models or supervisory regulations.

Most studies support the notion that an investment in ICT contributes to the returns at the firm level. Dedrick and Kraemer (2003) indicated that even though ICT does positively affect returns of a company, the magnitude of the increase in returns may differ vastly across different firms, meaning firms with the similar IT investment might have differing outcomes. This therefore leaves to suggest that organizational capital might be responsible for the varied performance. Organisational capital in this case refers to administrative practises which include restructuring business processes, workforce expertise, job training and others. Dedrick and Kraemer (2003) believed that ICT is not merely a means for mechanizing current processes, but in fact a driver of organisational change that can lead to efficiency.

For example Fadun (2013) carried out a research to determine the correlation between ICT and Insurance companies' profitability in Nigeria, having compiled the responses from the questionnaires given to the selected sample he conducted a regression analysis. The results revealed a positive correlation exists between ICT investment and profitability. He went on to state

that these companies should strive to regularly update their ICTs, in order to be relevant in a rapidly changing environment in the view of profitability. Muhammad et al (2013) carried out a study to determine the impact of ICT on bank performance in Nigeria, his results support Fadun's study to an extent because he discovered that even though ICTs increase profitability they do not however affect performance of the firm.

Kabanda (2014) conducted a research on the centrality of ICTs as a catalyst for economic transformation and growth in Zimbabwe. He used a combination of focus groups and surveys to collect the data required to produce a conclusive result. He discovered that though ICT adoption is somewhat hindered, it is a catalyst for economic growth and transformation in Zimbabwe which further supports the need for its adoption and use. Makwira (2016) undertook a study to find out the use and adoption of ICTs in SMEs in Zimbabwe using the UTAUT model as a basis. The data he gathered heightened the critical portrayal of the aspects that affect the implementation of ICTs. Using interviews he collected data from 12 SMEs in the Harare region and concluded that there is a relationship between the UTAUT model and issues that affect adoption of ICTs in SMEs and that most employees required skills and knowledge in order to effectively utilize their equipment. His study revealed that internet service providers and broadband facilities should provide their services to the population at affordable rates to encourage its implementation.

2.6 Potential Use of ICTs in rural councils

Utilization of ICTs by rural councils has numerous advantages to business practices which consist of an enhanced team work concerning interior and exterior business units due to extranets and intranets usage, reduced expenditures specifically after changing from paperwork to electronic files, the effortlessness with which communications with associates and customers can be achieved, enhanced client satisfaction, better accountability, market progression, and use of Enterprise Resource Software which improves strategic planning, Rohrbeck (2010). Computer systems allow for data presentation through various programs such as Microsoft PowerPoint, Google Slides and Apple Keynote. This can help the business to conduct meetings, budgets and decision making with access to all information relevant that is represented visually and is easier to follow than numbers in rolls and columns.

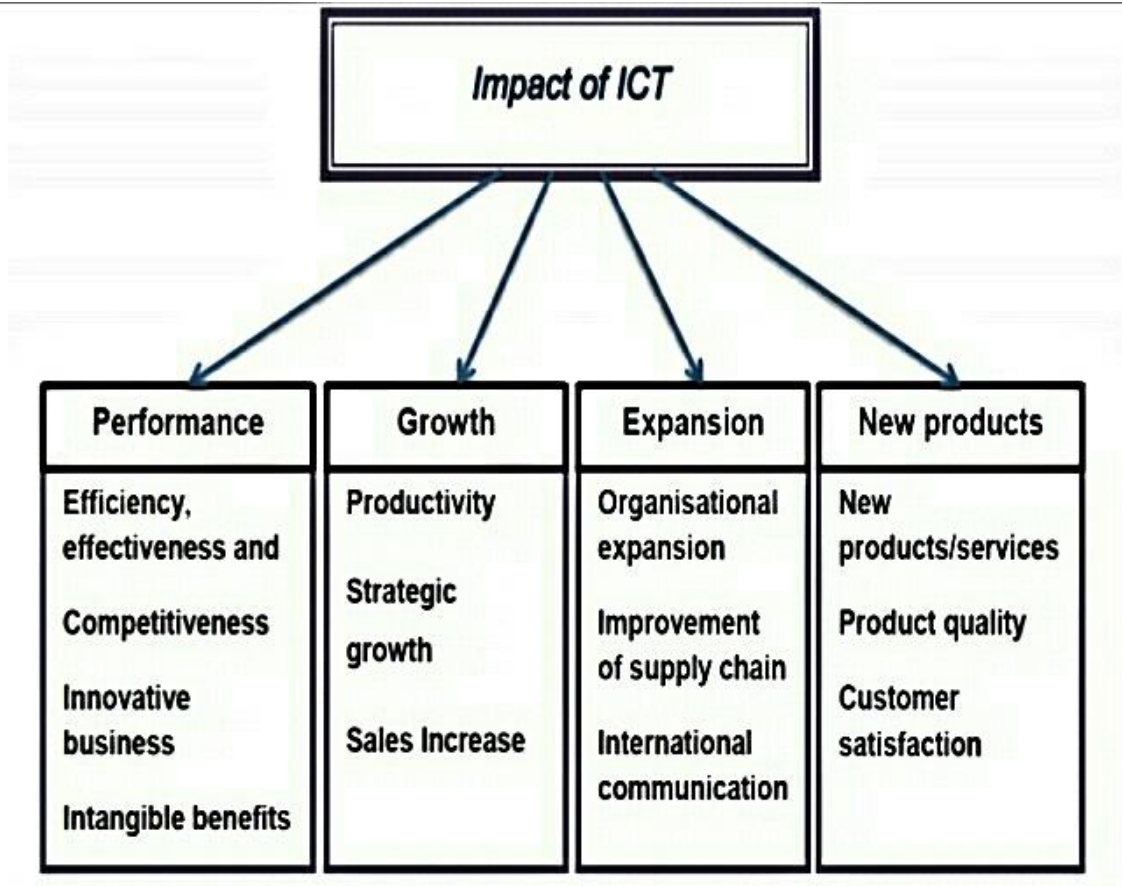
According to Arendt (2009) ICTs encompass a range of hardware, software, telecommunication and information administration technologies, applications and tools that are used to generate, evaluate, process, package, dispense, allocate, recover, accumulate and convert information. Implementation of ICTs offers many advantages through being able to transact and communicate easily within the company and with other companies. ICTs' implementation advances the expertise and understanding of administration within the organisation and can diminish operational expenses and intensify speed and dependability of dealings for both business-to-consumer (B2C) and business-to-business (B2B) transactions. Furthermore, according to OECD (2004) ICTs are effective devices for refining external communications and service quality for conventional and new customers. Use of ICTs infrastructure can aid companies to take part in e-commerce, which in turn will help them to increase efficiency in their day to day business. According to Poku and Vlosky (2010), using mechanical tools be it the internet, computers and cellphones will cut costs of communicating with suppliers or customers dispersed around the world and will eliminate geographical borders as a barrier to conducting successful transactions.

Otieno et al (2013) conducted a research on the effects of IT systems on revenue collection in Kenya, by local authorities. They gathered the necessary data and concluded that information technology can increase the revenue collection of a council. They discovered that ICTs in local authorities can help in timely collection of revenue from the residents, provides clear and updated records and improve management reliability. They also discovered that information technology helps enhance the internal controls of a company which improves the efficiency and effectiveness of the local authority.

Matimati and Rajah (2015) carried out a study on the use of e-governance by local authorities, they focused their research at the Chitungwiza municipality. Their results included benefits that such government entities can maximize on due to information technologies. They denoted that local authorities can improve transparency and accountability by posting audited financial reports and their procurement processes on their websites for public scrutiny which would lead to a more dedicated workforce and a drive to meet targets knowing that if they do not they are answerable to the public. Matimati and Rajah (2015) also suggested an improved relationship between the councils and the public through e-governance. This is because providing a platform for the

residents to communicate with the local authorities creates trust and gives them confidence in what the council is trying to achieve.

Figure 5: Impact of ICT adoption on the business organisation



Source: Consoli (2012), as cited by Kabanda (2014:475)

ICTs can be used as a strategic means to reinforce the business strategy of the company. Moreover, ICTs augment company efficiency, lessen costs and widen market range, both locally and globally, which may result in newer individuals taking an interest in the services provided. ICT can lead to faster communication within the company and improve the management of the organization’s resources resulting in the firm being more efficient. Seamless transmission of data in the form of electronic files over networked computers enhances the competence of business procedures such as data processing, documentation and additional office tasks.

Atom (2013) conducted a research on the impact of ICT on SMEs growth in Ghana. He undertook the study using cluster samples of commercial centres with vigorous commercial activity and discovered that despite ICT's many benefits 73% of the SMEs are not aware of its advantages. The overall outlook on his study was that role of ICT in improving business delivery services and innovations in SME is farfetched. However he still believes that their inability to exploit ICT is stifling growth potentials and that as a result the companies are faced with major growth or expansion challenges.

2.7 Strategies to decrease barriers to ICTs adoption

Rural councils have numerous possibilities to enhance their business process through use of ICTs, however, they are faced with many challenges which impede ICT adoption. Case in point, lack of technological infrastructure and human resources are some of the barriers to ICTs adoption. Regardless of all these barriers, there are a number of strategies proposed by various researchers on how to tackle the barriers encountered by the managers in ICTs' adoption. These strategies include infrastructure, financial resources, legal framework and human capital development. Infrastructure approach is usually provided by the government at reduced cost since councils are government entities. The government involvements consequently tend to influence the ICTs policy which is fundamental in building infrastructure, financing research and development, facilitating technological transfers, Ongori et al (2009).

A communications effort can also be applied to combat the barriers of ICT adoption, cost-benefit analyses must be performed and the managers must be made aware of the specific and measurable return on investment in technology. Training is an imperative force driving IT adopters to use technology. According to Apulu and Latham (2010) the nonexistence of suitable skills required to implement and sustain the IT system or technology processes and the dependence on employees to govern an important part of administration will lead to a failing management oversight. This brings to attention the need to make management at ease with technology through support and IT awareness programs on the one hand and hire more trained individuals on the other.

According to Arendt (2008) who undertook his study by gathering information from Spain, Portugal, Poland and USA discovered that breaking down the complexity of the technology makes it easier for non-adopters to accept ICTs. He goes on to further say it can be achieved by

introducing easy-to-use technology hardware or software such as financial management software to generate statements that can be used by any employee with basic computer understanding. Furthermore, he sought to dissolve apprehension by suggesting introducing manuals, in regional or local languages relating to software usage and lack of control over business processes. Finally, instinctive solutions will possibly break down the psychological barrier, allowing organisations to not only rapidly adopt these solutions but also to appreciate their advantages over traditional methods.

According to the Zimbabwe National Policy for ICT (2015) privacy and cyber security tend to be major concerns for the bulk of companies in Zimbabwe, they however recommended solutions to address said concerns namely communicate the significance of the cloud as a secure, cost-effective and opportune way to help organisations grow, enable the enactment of regulations concerning cybercrime, intellectual property rights, freedom of access to information, data protection and security, supplement existing businesses that are in the ICT sector, by encouraging training focused specifically on the cloud. The cloud, can offer a great, exceedingly cost-effective substitute to physical storage, back-up, virus protection and spam filtering. The cloud-based alternative gives superior flexibility in retrieving vital business information from essentially anywhere, given the employee has a connected device. The apparent weakness of cloud technology is that, while users can rely on it to counterpoise infrastructure, software costs and lost data risks, it will not be acceptable to most until broadband is widely available and reliable and issues regarding privacy and data security are addressed. Furthermore, companies need to be made aware of the prospects and resolutions presented by the cloud. Importantly, the cloud needs to be better communicated that is including how it works because presently there is a clear lack of understanding of what the cloud really is and the benefits it gives to users.

2.8 Wireless technology

According to the term wireless communication pertains to the transmission of information using electromagnetic (EM) or acoustic waves over the atmosphere instead of using any broadcast medium that uses wires. It therefore means that communication can occur without an explicit network of wires and one can communicate while on the move. Wireless technologies diminish the need for large communication infrastructure as signals are sent through wireless networks. Labour costs incurred through the maintenance and installation of wires are significantly reduced

as wireless technology is just that 'wireless'. Laudon et al (2010) assert that wireless communication assists rural businesses effortlessly communicate with their clients, suppliers and staff however this all depends on the business being able to afford said technology and being skilled enough to use it. Some of the wireless technologies obtainable are inclusive of the smart phones, cell phones, cordless telephones and personal digital assistants.

Laudon et al (2010), imply that most forms of mobile phones have been converted to versatile devices for data transmission digitally. Inclusive of voice communication, a person can also send text and e-mail, video call, send video clips and even surf the internet. The wireless revolution enlightened Zimbabwean companies to the wonders of ICTs however rural Zimbabwe is still lagging far behind.

2.9 Wireless Networks

Wireless network refers to a network that uses radio waves to link devices such as laptops or desktops to the internet or any other business network, it does not enlist the use of cables to link the computer networks, Goldsmith (2005). When a laptop is connected to a Wi-Fi, the connection is established to the respective business's wireless network. Wireless networks helps businesses to circumvent the cost of laying cables into buildings or as a connection between different organisational locations. Cecchini and Christopher (2003) believe that affordable wireless broadband access can positively impact a growing economy by encouraging investment and innovation through e-commerce, teleworking, e-government, e-agriculture and almost every socio-economic activity

2.10 Wireless Fidelity and Wi-Fi

This refers to a local area network (LAN) that uses high frequency radio signals to transmit and receive data over distances of a few hundred meters by using Ethernet protocol, Laudon et al (2014). The network allows an individual to connect to the internet from essentially everywhere at speeds up to 54mbps. The term Wi-Fi according to Goldsmith (2005) refers to the IEEE (Institute of Electrical and Electronics Engineers) 802.11 wireless LAN standard and it facilitates individuals connected to it and to send and receive information anyplace within the range of access point.

2.11 The Wireless Revolution

Wireless revolution is usually associated with the use of numerous ICTs. ICTs can be viewed as tools being used for gathering, storing, accumulating, editing and transferring of information in different forms SER (1997). ICTs are a significant component of growth and advancement which means they have the potential to enrich how people live and conduct business. For instance mobile phones have penetrated rural Zimbabwe and facilitated quick communication among people and lessen costs in terms of transport. Cecchini and Scott (2003) strongly believe that ICTs can empower people and reduce risks by widening access to microfinance. Cypher and Dietz (2008) state that it is mainly due to technological developments that civilizations have been able to grow so rapidly since the industrial revolution. Technology has enabled international trade and marketing by providing trade information platforms not formerly available to the general populace.

2.12 Chapter Summary

This section presents a literature search of the main discussion of ICT adoption and draws opinions and conclusions from a sample of literature sources in order to warrant my conclusion valid. The aims of the review is to find out what previous researchers deem to be the barriers to ICT adoption, how they proposed to deal with them and the impact of ICT on business performance and revenue. With regard to the objectives, what emerged from the previous literature is that barriers of ICT are more or less the same in rural areas of developing countries. Differences only come in the different locations and at different stages of adoption of the companies. This chapter therefore gives insight on the results of other studies and how to best proceed with mine.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

This chapter seeks to relate the methodology that will be applied by the researcher in collecting data concerning the problem under study. The term methodology is concerned with a structure of comprehensive principles and rules from which precise procedures may be derived to interpret or solve different problems within the range of a particular discipline (www.knotion.net). This chapter will be inclusive of the research design that was used, the population, sample size and sampling procedures. It will also include the instruments that were used to collect data stating why the chosen were appropriate possibly to enhance validity and reliability.

3.1 Research Design

The research design is a method used to answer the research topic. It refers to the course that a researcher chooses to take in order to accomplish the research's objectives. Research design is referred to as a strategy for choosing target population, research locations and data collection procedures to answer the research questions McMillian and Schumacher (2001:166). This research will use qualitative research design.

3.1.1 Qualitative Research

Qualitative research can be characterized by its purpose, which more or less fall in line with a certain facet of social life, which in turn tend to generate words rather than numbers. Qualitative approach tends to answer the 'what', 'why' and 'how' questions which are generally the main aim of this research paper. Gillham (2000) states performing a qualitative research allows one to carry out an inquiry where methods such as experimentation are not ethically permissible or useful. It is subjective in its approach and tends to focus more on perspectives, attitudes and motivations of the individuals involved rather than experimentation. This type of research avoids predispositions and provides a certain flexibility in that the study is not limited by certain boundaries. Usually the product of a qualitative inquiry is abundantly descriptive, which allows the researcher to capture what has been observed in the same arrangement in which they have naturally followed. It is the

most suitable methodology because the subject under research requires in depth opinions from participants.

3.2 Population

The population from which the sample was selected is inclusive of ward councilors, the council's heads of departments, other employees in the council and ordinary residents of the Nyanga district. This was done in order to get an unbiased picture of the issue at hand without leaning on the views of a single strata group.

3.3 Sample size

According to Lohr (2010) a sample is a subset of a population. The sampling procedure refers to the selection of a smaller group from the population that will act as a representation of the whole and it is where the information is gathered from. The sample size comprised of individuals from the heads of departments, employees and councilors of the NRDC as well as customers of the council. Therefore the sample size was subdivided into strata before the final sample was selected.

According to Krejcie and Morgan (1970) they specified that as a target population increases the sample size rises also but at a declining rate. The relationship between the sample size and population is illustrated in the table below.

Table 1: Defining sample size from the population

Table for Determining Sample Size from a Given Population

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

Note.—*N* is population size.
S is sample size.

Source: Krejcie and Morgan (1970)

Table 2: Respondents composition

Participants	Sampling frame	Sample size	% to sampling frame
Manager	6	6	100%
Employees	23	21	91.3%
Councilors	31	28	90.3%
Customers	64565	326	0.5%

Total	64625	381	
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Source: Own calculations from surveys

3.4 Sampling

Data collection from the managers at NRDC was done using a census, this is because the management is only a limited number of people and as such opinions from all facets of the council were required to gather and reach holistic results. This census also ensured that the researcher was able to gather untainted authentic responses from the decision makers of the council.

Employees of the NRDC were sampled purposively in order to get information from those who feel strongly for ICT and those who do not, to get varied opinions. Purposive sampling is a non-probability sampling method also known as judgement sampling. In purposive sampling the researcher selects the sample based on their insight of the population, its components and the nature of the research goals. This method was used for employees in order to target those who have access to the ICT and can offer relevant insights to the study.

For the councilors the researcher made use of snowball sampling. Snowball sampling according to Lohr (2010: 517) is based on the principle that individuals of the rare population know one another. This sampling technique was used on councilors because most of them reside in their respective wards which means they are dispersed over a large area, therefore snowball sampling allowed the researcher to identify councilors who attended all meetings, who were available which avoided wasting time and resources in tracking down councilors that would not be up to date with the council issues.

Customers were sampled using convenience sampling. This refers to gathering data from participants who are readily available and willing to participate in the study. This type of sampling is sometimes referred to as accidental sampling because usually the researcher chooses their respondents based on their availability and nearness to the place where the researcher is conducting data collection. The researcher performed the data collection for the customers at the NRDC offices and also collected data from wards that are in close proximity to the NRDC offices namely ward 20, 22, 30 and 31 so that respondents can give a true reflection of their opinion on the council's position on ICT usage whilst being on location or close enough.

3.5 Sources of Data

The researcher made use of both primary and secondary data

3.5.1 Secondary data

Secondary data is data which was not collected by the researcher or for the purpose of their research, Greener (2008:73). This data is not collected for the particular problem at hand, but was collected for other purposes by other individuals. The researcher obtained secondary data from NRDC's asset records, customer database, journals, internet and newspaper articles.

3.5.2 Primary data

Primary data is data that the researcher collects for a specific purpose, be it investigating a certain problem at hand. The data is collected originally, for the first time. Collection of data for this research was done using interviews and questionnaires. The researcher chose to perform interviews and questionnaires to collect data because Matimati and Rajah (2015) conducted a similar study on e-governance in Local Authorities and used those same tool to perform their research and managed to gather substantial results.

3.6 Data Collection Instruments

The term data collection instruments pertains to gathering of information pertinent to the subject matter of the study from the areas under consideration. The method used to collect data usually depend on the availability of resources, the study's nature, purpose and scope.

3.6.1 Questionnaire

A questionnaire is referred to as a formalized schedule consisting of a series of questions and other prompts used to gather information from respondents. There are 3 types of questionnaires namely, open-ended questionnaires, closed-ended questionnaires and a combination of both. Open-ended questionnaires are questionnaires that leave blank sections for the respondents to write an answer, it allows the respondent to elaborate what their opinion is on the question posed without being limited by standardized answers. Closed-ended questionnaires are the exact opposite of open-ended questionnaires as they usually require the respondents to answer with a tick in the box 'yes' or 'no'.

This research study consists of 2 different questionnaires that were used to gather information from the different groups of respondents namely; councilors, customers and employees. All the questionnaires were a combination of both open-ended and closed-ended questionnaires. The open-ended part of the questionnaire was used to collect data that may not apply to all individuals in order to solicit information that might be difficult to acquire in an interview, the closed-ended part of the questionnaire deals with those answers that need to be standardized.

Justification for Questionnaires

The questionnaires were a good method of collecting data because there was a high degree of anonymity for the respondents which promoted honesty of opinions. It was not time consuming to distribute the questionnaires and for them to be filled by the individuals chosen in the sample. This method of data collection allowed the researcher to gather information from a number of participants within a short amount of time which was very efficient. However other respondents did not return the filled questionnaires, or even never attempt to fill them.

3.6.2 Interviews

An interview refers to a method of collecting data through direct questioning. For this research paper, the semi-structured interview was used. Semi-structured interview according to McMillian and Schumacher (2006) are very much preferable because of their probes and pauses than their particular question format. They allow the interviewer to ask follow up questions were necessary and have some flexibility. Saunders et al (2003) stated that it is not mandatory for a researcher to follow a precise order of questions but can vary depending on the flow of the conversation when using semi-structured interviews. Key informants were the only ones interviewed, these people were inclusive of heads of departments and other employees of the council. Semi-structured interviews give respondents a chance to express themselves and allow for clarification in the response received. However not all individuals feel comfortable to share which usually result in inconclusive answers that may not be useful to the study. Success of an interview depends on the willingness to comply of the interviewee as well as their emotional state and the ability of the researcher to avoid asking leading questions.

Justification for Interviews

The researcher conducted face to face interviews, because the key informants selected for the interviews were based at the NRDC offices in Rochdale Nyanga and the researcher was able to accommodate the varied times that these participants were free to be interviewed. The face to face interviews allowed the researcher to capture both verbal and non-verbal cues which also showed the level of enthusiasm the participants had about the subject matter. The interviews helped the researcher to get earnest responses that are not biased. The researcher also chose interviews as a method of data collection because Makiwa (2016), employed them to conduct his research on the use and adoption of ICTs in SMEs in Zimbabwe.

3.7 Validity and reliability

A study is deemed to be reliable if the results can be reproduced over a certain period of time using a similar methodology and it is deemed to be valid if the research instruments used are able to answer the research questions and establish how truthful the results of the study stand. Pilot testing was conducted to determine the reliability of the research instruments. A select few participants were chosen to answer the questionnaires and give their opinions on how helpful the questionnaires were in providing adequate results for the research. The researcher also ensured validity and reliability by creating semi-standardized questionnaires that ensure consistency and dependability of the results gathered.

3.8 Data collection procedure

The researcher collected the required data from wards 20, 22, 29, 30 and 31 through the assistance of an additional individual who aided in distributing and collecting the questionnaires in the particular wards. The participants were asked to fill in the questionnaire and were told that they were under no obligation to do so if they did not want to. This was done to reduce the risk of gathering false data because respondents might just try to finish the questionnaire without really reading the questions.

The researcher visited the NRDC offices and distributed the questionnaires. The filled in questionnaires were collected two days later, this was done to give the respondents ample time to fill in the questionnaires and avoid getting semi-filled questionnaires. The researcher scheduled

appointments via telephone with the eight key informants who were selected for the interviews. The researcher conducted face to face interviews and recorded the responses verbatim on paper using English language and the occasional Shona were the respondents were trying to further enunciate themselves.

3.9 Ethical considerations

According to Fouka and Mantzorai (2011) ethics are a structure of values which can critically alter preceding thoughts about choices and actions. It is dealing with the underlying forces of decision making concerned with what is right or wrong. Ethical considerations in research have to do with confidentiality, informed consent, voluntary participation and anonymity. It is therefore important to inform the respondents the purpose and use of the information they provide. The questionnaires did not bear the name of the respondents so as to avoid compromising their anonymity. The researcher was required to display objectivity and honesty in order to accomplish the research ethically. The respondents who participated in the study using questionnaires did so voluntarily and were even given room to withdraw if they felt the need to. Those who were interviewed were assured of their anonymity in that the researcher used pseudonyms for them.

3.10 Data presentation and analysis

This process entails the researcher bringing order, edifice and significance to the quantity of collected data. The data collected was processed using Microsoft Excel. This is where analysis of the relationship between the independent variable, which is, ICT adoption and other numerous dependent variables was carried out. The researcher made use of tables, pie charts, bar graphs, descriptions or text to present the information.

3.11 Chapter Summary

This chapter serves to enlighten the aspect of methodology applied to this study. It covered the research design, population used, sample selected and justification for such choices. Data collection made use of in the study include interviews and questionnaires. The next chapter aids to present and edify findings of the investigation.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter entails the assessment of data gathered from primary and secondary sources. The instruments used for the presentation of the data collected were selected on the appropriateness and suitability of the variable under consideration. The questionnaire response rate is stated and analyzed for all questionnaires distributed. The researcher sought to answer the research questions stated in chapter one, accomplished with the assistance of questionnaires including observations and interviews conducted by the researcher. From these discoveries, the researcher will draw conclusions and recommendations.

4.1 Response rate

A total of 326 questionnaires were distributed among the residents of the Nyanga District mainly wards 29, 31, 30, 22 and 20 to individuals above the age of 18 but below the exemptible age. All the managers at the council were selected to answer questionnaires, 21 employees also participated in the research as well as a vast majority of the councilors of the district. Interviews were conducted to a select few of the employees and management of the council. A tabulated representation of the distribution and level of response on both the questionnaires and interviews is illustrated below.

Table 3: Response rate

Instrument	Number sent	Response	Percentage
Questionnaire to the public	326	248	76%
Questionnaires to management	6	5	83%
Questionnaire to the employees	21	17	81%
Questionnaires to councilors	28	19	68%
Interviews	8	8	100%

Total	389	297	76%

Source : Primary data, (2017)

From the table above the public/customers responded at a rate of 76%, this was mainly due to the fact that 24% of the questionnaires sent out were not returned and some were returned partially or entirely unfilled. The questionnaires distributed to the management and employees yielded a response rate of 83% and 81% respectively. This was because some of the employees were not in attendance at work during the week the data collection was carried out however the response rate was relatively high regardless. Councilors' response rate was the lowest of all groups under consideration at 68%, mainly because most of them were out of reach and therefore data was gathered from those available. Interviews were a success at 100%, the key individuals selected for the interviews were all in attendance. Wholly the response rate managed to reach 76%.

4.2 Employee and Councilor's Questionnaire

4.2.1 Are there problems with the uptake of ICTs in rural councils?

Table 4: Responses to whether or not there are problems to ICT adoption in rural council

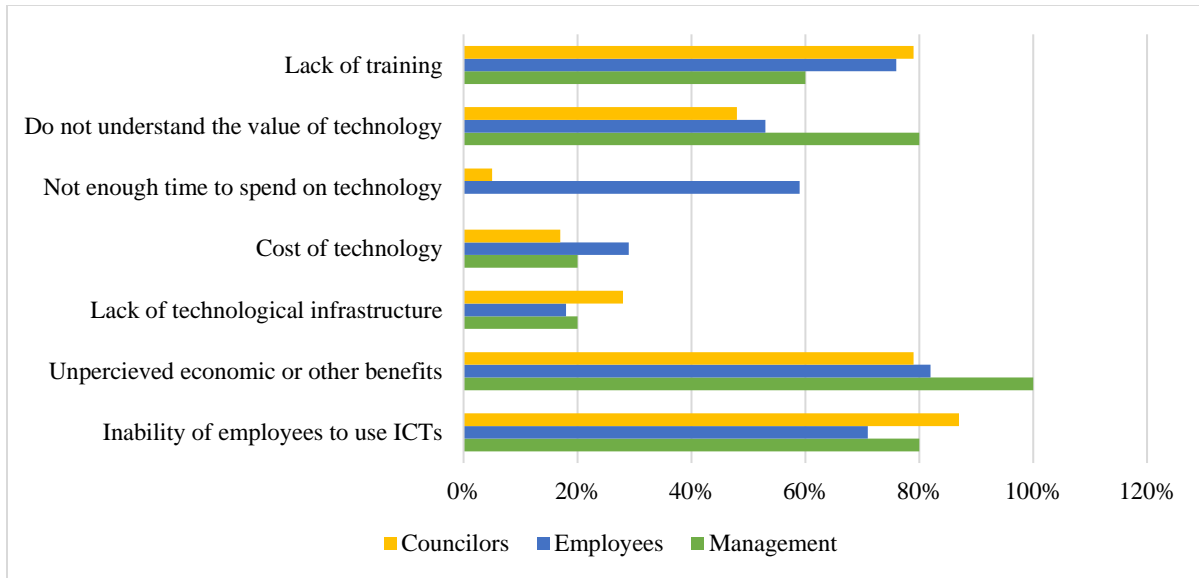
Responses	Frequency	Percentage
Yes	38	93%
No	3	7%
TOTAL	41	100%

Source: Primary data

This question was asked the employees and management of the NRDC in which 93% of them answered yes, this implies that these members of the council have seen the difficulties which the council faces in its quest for ICT adoption.

4.2.2 What are the issues restricting ICT usage in rural councils?

Figure 6: Barriers to ICT adoption at NRDC



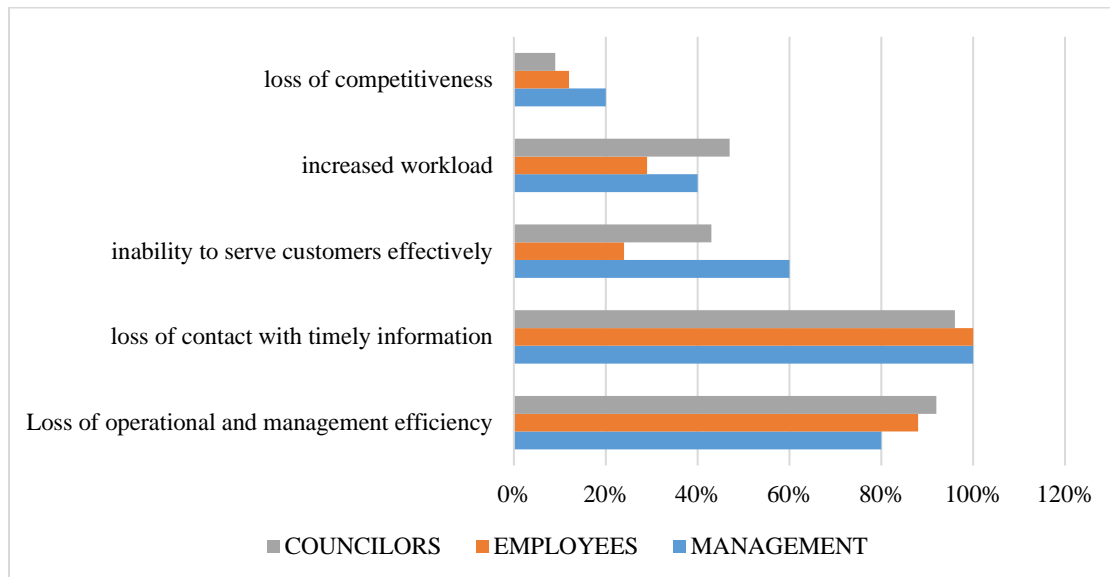
Source: Primary data

The researcher’s findings depict that the majority of the management team, councilors and the employees at NRDC believe that lack of training, not understanding the value of ICT, inability to use ICTs and unperceived benefits of ICTs are the main hindrances to ICT adoption in the council. All groups however, do not believe that the cost of technology and lack of technological infrastructure can be attributed to the lack of ICT with in the council. The staff at NRDC do not fully comprehend the benefits ICTs have on the business performance and operation, which is in line with what the technology acceptance model (TAM) suggests.

Furthermore even though the employees relatively consider the unavailability of time to spend on computers as a major barrier, the management all disagree and regard it as the employees’ reluctance to engage in new work methods. These results are somewhat in line with researches conducted by Ladokun et al (2013), Kapurubandara and Lawson (2006), in which they discovered that inadequate ICT infrastructure, resistance to organizational changes by employees, the inability to apply ICT in relation to customers and suppliers, lack of financial resources, the organizational management style and support, skills and training among other factors contribute to an organization’s reluctance to adopt ICTs. Poor service by internet providers and power outages were also emphasized by the respondents as a significant inhibitor of ICT adoption in the rural council.

4.2.3 What are the consequences of not using ICT?

Figure 7: Responses on consequences of not using ICT in NRDC



Source: Primary data

The responses given by the employees, the management and councilors of NRDC on the consequences of not using ICTs are illustrated in Fig.7. All groups agree that not adopting ICTs result in individuals not getting time sensitive information when it is required. Most of them however do not believe the absence of ICTs can affect their competitiveness, this is due to the fact that NRDC is a local authority in the Nyanga district and as such cannot face competition within their district.

Management also strongly believes that loss of management and operational efficiency and the inability to serve customers effectively come about if the council does not adopt ICTs. Whereas employees seem to only feel strongly about loss of management and operational efficiency and loss of contact with timely information as the main consequences. Councilors also placed emphasis on the inability of the council to serve its customers effectively and increased workload, this is because as councilors their priority is the betterment of service provision for the individuals within their wards. Other respondents raised issues such as poor financial performance and low employee morale as other consequences of NRDC not fully adopting ICTs.

Fig.5 illustrates the importance of ICTs to a business and the results shown above reveal that the staff at NRDC share similar concerns in that their company will not be able to achieve a higher

level of business operation and as such will remain an underperforming Local Authority. Fadun (2013) revealed that ICTs positively influence the success of a business and as such are to be regularly updated in order to stay viable.

4.2.4 Findings on the business computer systems that the employees and management at NRDC are able to implement

Table 5: Responses on the business computer systems the employees are familiar with

Business computer systems	Frequencies	Percentage %
Quantrix	16	73%
Pastel	4	18%
AutoCAD	2	9%
Epanet	2	9%
Excel	22	100%
None of the above	0	0%

Source: Primary data

From the table above, 73% of the employees at NRDC are well versed with the Quantrix business forecasting and planning software, it was later revealed that the reason why most of the employees can operate it was because they held an expert-guided IT seminar in which many employees attended. AutoCAD and Epanet are not well known to the employees at NRDC with 9% each, however it was made clear that they are architectural softwares and as such only individuals in the technical department would be able to operate them. Likewise for pastel accounting software which is at 18%, only representing the employees in the finance department. The findings gathered revealed that all employees at NRDC are knowledgeable of the excel software.

4.3 Customer's Questionnaire

4.3.1 Socio-demographic Data

For the researcher to uphold the reliability of the research findings, the identification of the respondents' demographic data in respect of Gender, Age, and Ward where the individual resides.

Table 6: Gender of respondents

Sex	Frequencies	Percentage
Female	142	57%
Male	106	43%
Total	248	100%

Source: Primary data

The table indicates that the majority of the respondents were female taking 57% and the males were at 43%, which shows that female responded more to the questionnaires than males. This can be credited to the fact that females are more involved in the communities than males.

4.3.2 Age of the Respondents

Table 7: Age of respondents

Age bracket	Frequency	Percentage
18-27years	52	21%
28-39years	99	40%
40-55years	97	39%
Total	248	100%

Source: Primary data

From the table above, 21% of the respondents were of the age group 18-27 years, 40% were of the age group 25-39 years and 39% were those from 40-55years. The majority of the respondents are in the age group 25-39 because they are the ones who pay bills to the council most. The age group 40-55years is also high because they are home owners and have dealings with the council.

4.3.3 Place of residence of the respondents

Table 8: Showing residence of the respondents

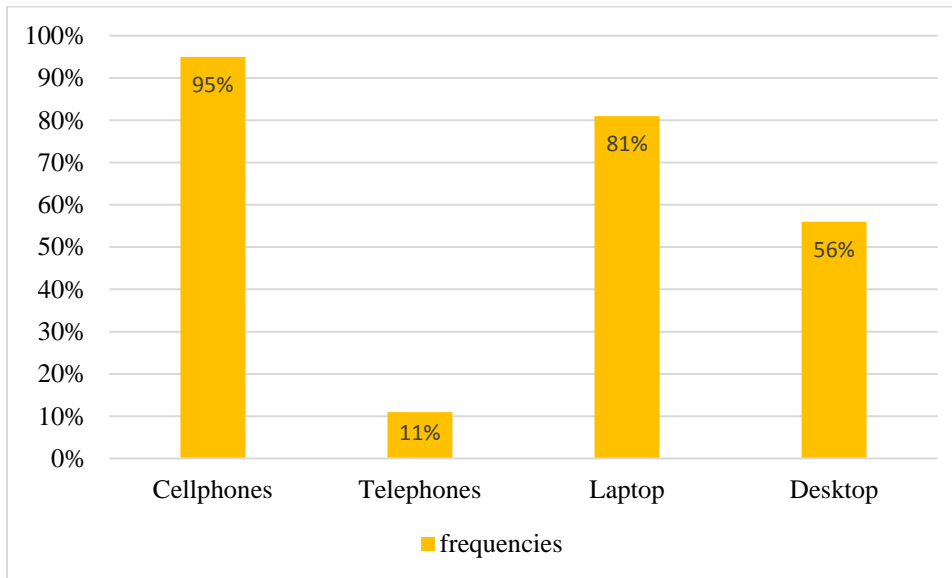
Ward number	Frequencies	Percentage
20	42	17%
22	20	8%
29	94	38%
30	32	13%
31	60	24%
Total	248	100%

Source: Primary data

From the table above, 38% of the respondents live in ward 29, which is where the NRDC offices are located, ward 31 is in close proximity to ward 29 and is where 24% of the respondents reside. The researcher travelled to ward 20, 22 and 30 in order to gather data.

4.3.4 What information technologies do you have access to?

Figure 8: Responses to the information technologies the customers have access to

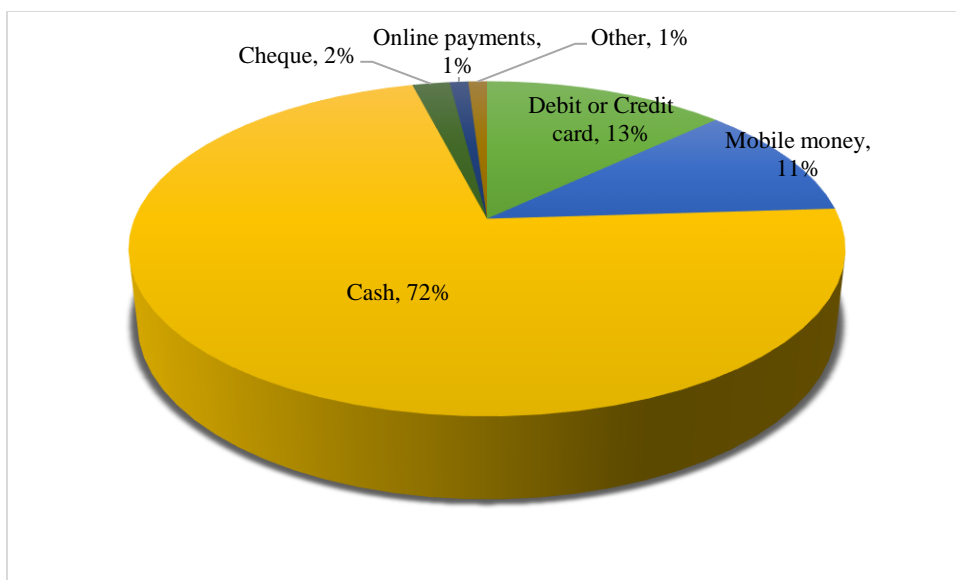


Source: Primary data

The research findings show that many of NRDC's customers have access to or are able to use cellphones and laptops, however telephones and desktops have 11% and 56% respectively because of their immovability. These results are supported by a study conducted by Kabanda (2014; 418) whose results showed a marked increase in cellular and mobile subscriptions and usage from the years 2000-2013. This then shows that a lot more individuals have access to communication technologies in recent years.

4.3.5 What is your preferred method of payment?

Figure 9: Preferred mode of payment when transacting



Source: Primary data

With regards to the adoption of non-conventional payment methods, the majority of customers 72% use cash as their preferred mode of paying for their bills and stands, followed by 13% who used debit or credit cards, 11% use Mobile money, 2% use cheques, 1% use online payments and 1% use other means of payment. Further prodding revealed that most of the 11% who use mobile money and the 13% who use debit or credit cards do it out of necessity, driven by the country's current financial crisis and those who pay via cheques often pay on behalf of an institution they work for.

A study conducted by Dube and Gumbo (2016) revealed that customers preferred to pay using cash and that ATMs and mobile money were a secondary option to the customer which was force upon them by the cash crisis being experienced within the country.

4.3.6 Respondents' opinion of NRDC's service processes and provision

Table 9: Showing preferences and opinions of the customers on NRDC's ICT status

Questions	Yes	No
Are the council's semi-automated processes an inconvenience	54%	46%
Do you feel reluctant to pay your bills at NRDC because of their record keeping	72%	28%
Have you ever used e-mail to communicate with the council	47%	53%

Source: Primary data

From the table above, customers are not overly perturbed by the state of semi-automation that is present at NRDC, however the record keeping at the council is somewhat disconcerting to the customers as seen by the 72%, due to the fear of paying a bill twice because the record of the first payment was lost. Customers also expressed their distress over the record keeping in that some were wrongly served court summons and uncredited receipts from as far as 5years back. Of the 47% customers that have communicated with NRDC via e-mail, most revealed they were replied 4-8days later.

4.3.7 Respondents' mode of communication with NRDC

Table 10: Showing customers' mode of communication with NRDC

Mode of communication	Frequencies	Percentage
Phone call	131	53%
Message	28	11%
Fax	7	3%
E-mail	82	33%
Total	248	100%

Source: Primary data

The research results show that 53% of the respondents prefer to communicate with NRDC via phone call, mainly because it is instantaneous. This is followed by e-mail which is used by 33%, messaging 11% and fax used by 3% of the respondents.

4.4 Interview responses

From the data collected through interviews conducted, the researcher managed to ascertain that NRDC makes use of a total of 17 computers for all the offices currently. Four of these computers have been bought with in the last 2 years. In this rapidly evolving technological age, 13 computers have been operational for more than 3 years requiring maintenance every year which is very costly for the council. Furthermore most of those computers are not compatible with business softwares like Pastel and Epanet, which in turn becomes a limiting factor to the adoption of information technology systems in NRDC. According to the responses obtained the council holds expert guided IT seminars twice a year, however not all employees attend as the seminars are conducted during

work hours and other employees will have to continue with work as usual. Therefore not all employees benefit from these seminars.

The responses from the interview also revealed that NRDC relies on keeping paperwork and files and regard computer generated cashbooks and other financial statements as a secondary function. However the responses also suggest that the employees of NRDC are optimistic about being fully automated within the next 5years. The NRDC provided a new service in 2016 to cater for the cash crisis in Zimbabwe which is bill payment through mobile money using ecocash.

4.5 Chapter Summary

This chapter served to present, interpret and analyze data gathered for the research. The responses gathered on the adoption and use of ICT in NRDC were presented in bar graphs and pie chart as well as tables. The next chapter focuses on recapitulating the entire study and its findings, making study conclusions and recommendations were possible by the researcher.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter concentrated on summarizing the major findings, making conclusions and recommendations.

5.1 Summary

This study was meant to examine the factors that hinder adoption of ICTs in Nyanga rural district councils in Zimbabwe, to find out the impact of ICTs on revenue and to initiate ways to better integrate ICTs in the rural council. Qualitative approach to research was used on this study, using interviews and semi structured questionnaires to collect the data required. Respondents were chosen from three main groups of people namely; councilors, customers and employees at NRDC and relevant samples were selected from those groups. Snowball sampling was used to select respondents from the councilors, customers were sampled using convenience sampling, employees of NRDC were sampled using purposive sampling and a census was conducted for the management of the Local Authority.

Relevant literature was reviewed which dealt with the current position of ICTs in Zimbabwe, the use of ICT in business, the impact of ICTs on revenue and the business operations, barriers to ICT adoption and the strategies proposed by many researchers to combat those barriers. Response rate was relatively high and resulted in the collection of adequate data to make meaningful conclusions and interpretations.

5.2 Summary of major findings

ICT adoption at NRDC

- a) The employees and management at NRDC were in agreement that ICT adoption is a challenge at the council as many have stated that it is a goal that they have been trying to achieve for a long time now.
- b) Unperceived benefits of ICTs and not understanding the value of ICT are what the management at NRDC believe to be the main hindrances. The interview results revealed that the management tries to educate their workforce through expert guided seminar they conduct twice a year. Their goal is to create a mindset in which their employees prefer IT to manual processes.

- c) Employees regarded lack of training, unperceived benefits of ICT and not spending enough time on ICTs as the chief barriers to its adoption at the council as shown in Fig.6. A number of employees complained that even though the council conduct ICT seminars, not all employees attend because the seminars are conducted during working hours and as such other workers must continue performing their tasks. The employees expressed their dissatisfaction with the limited computers at the council and regard it as a main barrier because they cannot perform their tasks using outdated and faulty computers.
- d) Councilors believed the barriers to ICT adoption at NRDC to be the inability of employees to use ICTs and lack of training. Many of the respondents revealed that the issue of ICTs in the council has been ongoing for a long time and simply believe the unsuccessful attempts at adopting IT are because the employees are unable to use them, see Fig.6.
- e) The managers, employees and councilors believe that loss of timely information and loss of operational efficiency to be the main consequences of not adopting ICTs. They evidenced this with last minute reports, the inability to meet deadlines, see Fig.6.
- f) Results showed that all employees have a basic understanding of information and communications technologies, they own cellphones and are able to operate excel. A select few are able to use pastel, AutoCad and Epanet depending on the department they work in.
- g) The customers of NRDC have relative access to ICTs most of it being cellphones and laptops, see Fig.8.
- h) From the results in fig.9 most customers prefer to pay their bills using cash, but due to the cash crisis in the country most of those are resorting to debit/ credit cards and mobile money using faculties such as ecocash, telecash and onewallet as payment methods.
- i) The customers expressed their reluctance to pay bills at NRDC using varied payment methods because the council has poor record keeping and many customers complained that they have been double charged for certain bills, be it refuse collection or any other charge.
- j) Most of the customers opt to deal with the council in person than to call, text, fax or e-mail because they sometimes do not get a direct response that way.

5.3 Addressing the research questions

5.3.1 What revenue collection opportunities are associated with ICT adoption in rural councils?

Based on the research findings collection opportunities for the NRDC can come about as a result of multiple platforms which customers can use to pay their bills. These include mobile money, cheques, online payments and credit/debit cards.

Reliable financial reporting and suitable Internal Control Systems can also improve revenue collection for the council, as well as boost efficiency and effectiveness. The council can use these to check against budgets set and take necessary measures to correct any underperformances.

The council can avoid loss of revenue through non-updated valuations of the properties, difficulties in identifying property owners and unauthorized buildings. Many respondents revealed that their property cards sometimes had misspelt names, outdated addresses and the property would still be under the legitimate deceased owner instead of the successor which resulted in their rates or land invoices not reaching them.

5.3.2 What challenges does NRDC face in adopting ICTs?

Based on the results gathered most of the employees, managers and councilors at NRDC view the following as the barriers to ICT adoption at the council;

- a) Lack of training
- b) Unperceived benefits
- c) Cost of technology
- d) Employees not understating the value of ICTs
- e) Lack of technological infrastructure
- f) Lack of requisite skills to use the ICTs
- g) Poor service offered by the internet service provider

5.3.3 How can ICT adoption and integration be accelerated within the council?

Most respondents of the research were adamant that an increase in the number of expert-guided seminars performed per year and allowing these to be performed during non-working days so that every employee can attend will effectively tackle most of the problems raised above. They also devised that if the employees are able to operate effectively the available computers they can

increase their revenues and in turn buy more sophisticated hardware to provide better services to their clientele.

5.4 Conclusion

The research results have shown that as Nyanga rural district council tries to implement as well as utilize information technologies, concerns about the employee's expertise, training, costs, internet service, power outages and infrastructure remain obstacles to the adoption of information technologies in rural councils. This study is expected to increase the awareness and understanding of ICT adoption in rural councils. Based on the results gathered, the research established that investment in ICT is very essential to Local Authorities because computerized processes have a progressive influence on revenue collection. Computerization of council processes such as revenue collection improves efficiency due to timely valuations of properties, augmenting management reliability, provision of orderly and updated records among other factors. Information systems through the Internal Control Systems can also enhance the council's operations which in turn boosts efficiency and effectiveness of the council.

5.5 Recommendations

- a) Detailed information about land/ property owners should be captured and recorded in a database as soon as the individual is given the land and necessary changes should be updated as soon as they occur such as change in ownership or change of contact details of the individuals.
- b) There is also need for the council to improve its communication with its clients in that instead of sending flyers and posters they use e-mails and phone calls. This way they are guaranteed to communicate with all their clients even the ones that reside far away from the Nyanga District.
- c) The council can use television and radio to inform the public regarding the need for paying property rates and taxes and the importance of said rates to the growth of the society and its impact to the nation.
- d) The council can strengthen its capacity to respond to client demands for them to install ICT applications by building better skill and awareness within the council so that they are able to apply the ICTs effectively.

- e) The council should regularly update their website, they should post information they wish to communicate to their clients and use the website as a platform to get feedback and address issues their clients might raise.
- f) The council also needs to put more emphasis on the training of their staff through workshops and ensure that every employee is able to benefit from them.

5.6 Suggested areas for future study

This research might not cover all facets of the IT adoption in rural councils, such as ICT impact on performance in rural councils. Another area to cover could be the employees' attitude regarding ICT adoption and find out if they fully accept use and need for ICT. The level of computerization of revenue collection employed and its effectiveness is also an avenue one could try to exploit or look at the effect of adequate Internal Control Systems (ICS) on revenue collection of rural councils.

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Appendix A: Employees Questionnaire

I Yemurai Manyevere, a student at M.S.U doing a degree in business management, am conducting a study on **the adoption and use of ICTs in rural councils**. I hereby kindly ask you to answer the following questions, and be assured that the information you provide will be treated confidentially and its use is for academic purposes only.

General information

Gender M F

Post in the council.....

Department of the council you operate in.....

Section A

Do you think there are problems with the uptake of ICTs in rural councils? Yes No

What are the factors limiting ICT usage in Rural councils (multiple answers accepted)

- Inability of employees to use ICTs
- Unperceived economic or other benefits
- Lack of technological infrastructure
- Cost of technology
- Not enough time to spend on technology
- Do not understand the value of ICT
- Lack of training

.....
.....

What are the consequences of not using ICT (multiple answers accepted)

- Loss of operational and management efficiency
- Loss of contact with timely information
- Inability to serve customers effectively
- Increased workload
- Loss of competitiveness

.....
.....

What business computer systems are you familiar with

- Quantrix business forecasting and planning software
- Pastel accounting software
- AutoCAD architectural software
- Epanet
- Excel
- None of the above

Do you prefer to perform your tasks manually. Yes No

Appendix B: Customers Questionnaire

I Yemurai Manyevere, a student at M.S.U doing a degree in business management, am conducting a study on **the adoption and use of ICTs in rural councils**. I hereby kindly ask you to answer the following questions, and be assured that the information you provide will be treated confidentially and its use is for academic purposes only.

Section A: Demographic information

Gender M F

Age 18-27yrs 28-39yrs 40-58yrs

Occupation.....

General information

Village

Ward.....

District.....

Section B

1. What information technologies do you have access to?

.....

2. What is your preferred method(s) of payment?

.....
.....

3. Do you consider the council's semi-automated operations an inconvenience? Yes No

4.a) Do you feel reluctant to pay your bill because of the council's record keeping? Yes No

b) If yes can you elaborate on the reasons why?

.....

5.a) Have you ever used email as a form of communication with the NRDC? Yes No

b) If yes how long did it take for them to reply you?

.....

c) If no what form of communication do you use with the NRDC?

.....

Appendix C: Interview questions guide

1. How many computers does the council currently have?
2. How many computers have you bought within the last 2 years?
3. How often do the computers require maintenance?
4. Are the computers compatible with most operational software i.e. (pastel, epanet and AutoCAD)?
5. How often does the council conduct expert guided IT seminars?
6. Are you a paperless organization or do you still hold paperwork in high regard?
7. How long do you believe it will take the council to fully automate their services?
8. Do you believe the council can benefit from an addition in computer equipment?
9. Can NRDC facilitate customers to pay their bills using ecocash, telecash or onewallet?

Appendix D: Permission Form



NYANGA RURAL DISTRICT COUNCIL
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XC162/25

13 February 2017

Yemurai Manyeveg
Stand 102 Daicker Drive
Rochdale

Dear Madam

**REF: YOUR APPLICATION FOR PERMISSION TO CONDUCT RESEARCH ON ICT ADOPTION
IN RURAL COUNCIL-CASE OF NYANGA RURAL DISTRICT COUNCIL.**

The office is in receipt of your letter dated 24 January 2017 on the above matter. Council is pleased to notify you that you have been granted authority to carry out your research on ICT adoption in Rural Councils. We however would like to remind you to observe all research ethics as you carry out your research and we hope you will share with us the research findings.

Yours faithfully


NYANGA RURAL DISTRICT COUNCIL
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FOR CHIEF EXECUTIVE OFFICER
NYANGA RURAL DISTRICT COUNCIL

