

**THE EFFECTIVE GOVERNMENT INFORMATION ACCESSIBILITY
SYSTEM FOR A COMMUNITY IN THE REMOTE AREAS OF SOUTH
AFRICA**

BY

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DECLARATION

I declare that the dissertation hereby submitted to the Central University of Technology for the degree Masters' in Information Technology has not previously been submitted by me for the degree at this or any other University, that it is my own work in design and execution and that all material contained therein has been duly acknowledged.

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DEDICATION

This dissertation is dedicated to my late father and mother, my children Hanyani, Mafanele and Kulani.

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First and foremost, I would like to thank the Lord who gave me the ability and endurance to complete this dissertation. Philippians 1:6 “He who began to do good work in you will carry it on into completion”. In addition, I wish to express my sincerest gratitude and appreciation to the following people:

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ABSTRACT

The aim of this study has been to find out how the community in the remote areas of South Africa access government information. The study is based on four villages, two in the Northern Cape Province (Heuningvlei and Galeshewe) and two in Limpopo Province (The Oaks and Finala). A quantitative design was used. Open and closed-ended questionnaires were used to collect data from the community. Out of 200 questionnaires distributed only 144 responses were received. Responses in the questionnaires were tabulated, coded and processed using the Statistical Package for Social Sciences (SPSS) programme. Based on the analysis in Table 4.13, the study showed that 44 percent of the sampled community have access to information through Television which they classified as technology.

Shortage of telecentres, distance to telecentres, age, lack of education, monthly income, infrastructure and transport cost were some of the important factors contributing to a lack of access to information. Some of the findings are that most of the telecentres are located far from towns, more than 7 kilometres from the village. Ideally, telecentres should be located near the community, within a short walking distance.

It is recommended that provision/establishment for easy access to information and communication services by the Universal Service and Access Agency of South Africa (USAASA) in the remote areas in the Northern Cape and Limpopo province is strongly considered for implementation. This will overcome the gap that exists between the urban and semi-urban communities regarding access to human rights information such as rights to life, equality, freedom of speech, assembly and access to information. It is also assumed that the implementation of telecentres and Internet Cafes, in order to facilitate the adoption of e-government information by people residing in remote areas (semi-urban areas) such as Heuningvlei, Galeshewe, The Oaks and Finala will contribute to better access to human rights. The study also recommends that the service costs charged by the telecentre and Internet Cafes should not be expensive. This will assist the community to afford to pay Internet services. Information is important for decision-making. For this reason, it is recommended that continued campaigns on awareness about the importance of access to information through telecentres and Internet Cafes should be conducted.

Key Terms: Digital divide, Electronic Government, Electronic mail, Information and Communication Technology, Internet, Information Technology, Information, Remote area, Semi-urban area, Telecentre, Village.

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LIST OF ACRONYMS

ANC	Africa National Congress
CDITP	Centre for Development and Information and Telecommunication Policy
COMTASK	Communication Task Team
CSO	Civil-society organisations
DWAF	Department of Water Affairs and Forestry
E-GOVERNMENT	Electronic Government
E-MAIL	Electronic mail
GCIS	Government Communication and Information System
HANIS	Home Affairs National Identification System
ICTs	Information Communication and Technologies
IDRC	Independent Development Research Centre
ISPs	Internet Service Providers
IT	Information Technology
KZN	Kwazulu-Natal
LAN	Local Area Network
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organization
PDF	Portable Document Format
RDP	Reconstruction and Development Programme
SACS	South African Communication Services
SACOD	Southern Africa Communications for Development

List of acronyms (continued)

SAITIS	South African Information Technology Industry Strategy
SANCO	South African National Civic Organisation
SPSS	Statistical Package for Social Sciences
UNISA	University of South Africa
UNDP	United Nations Development Program
USA	Universal Service Agency
USAASA	Universal Service and Access Agency of South Africa

CHAPTER 1: BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The study examines how the community in the remote areas of South Africa access government information. Lack of access to information, especially by the community in the remote areas is a concern.

The South African government policies required national and provincial state departments to provide full, accurate and up to date information about the services they provide and who are entitled to them. This must be done in order to ensure that all those who need it, especially those who have previously been excluded from the provision of public services, receive this information (Russel & Bvuma 2001:241-265).

According to the *Business Day* (September 9, 2005:4), the then President of the African National Congress (ANC) youth league Fikile Mbalula, said that “It is essential that information be provided in a variety of media and languages to meet the different needs of South African communities that are ignorant or unaware of the constitutional protection that they have”.

The researcher said the miscommunication such as feedback regarding community development matters has, on occasion, resulted in hostility in the relationships between government and the communities involved. Sometimes it causes riots that lead to loss of materials, self-freedom and sometimes human lives. The researcher is of the opinion that some of the problems which caused riots in South Africa are because of lack of service delivery and empty promises by the government to the citizens.

In order to investigate this problem, the study focused on how the government information accessibility system impact the community in the remote areas of the Northern Cape and Limpopo Provinces to access information concerning human rights by means of online information through telecentres and Internet Cafés.

The general interest in e-government is illustrated by the third annual update on global e-government which monitors developments in the delivery of public information and government services through

the Internet (West 2003:2 of 19). Many governmental units worldwide have embraced the digital revolution and are putting a wide range of materials, from publications and databases, to actual government services, online for citizens' use. The use of the Internet to deliver government information and services has become a growth industry in the world.

The e-government offers the potential to reshape the public sector and remake the relationship between citizen and government. The wide variety of information needs in societies affects the extent to which e-government is taking hold, and creates an opportunity for further future research to study how the e-government revolution affects public sector performance and democratic responsiveness.

E-government has the potential to improve the performance of public institutions and make them more transparent and responsive; facilitate strategic connections in government by creating joined-up administrations in which users can access information and services via portals or 'one-stop-shop'; and empower civil-society organisations (CSOs) and citizens by making knowledge and other resources more directly accessible (Coleman 2003:10).

Telecentres have been praised as a solution to development problems around the globe because of their ability to provide remote, rural, and disadvantaged communities with much needed access to ICTs, thus narrowing the 'digital divide' (Dymond & Oestmann n.d; Colle & Roman 2001:2). Colle and Roman (2001:2) further maintain that telecentres provide access to educational CD-ROMS. Telecentres provide public access to the Internet, for educational, personal, social and economic development (Reilly & Gomez 2001:1).

In South Africa, Multipurpose Community Information Centres have been identified as the primary approach for the provision of communication and information for under-resourced areas as they can offer a wide range of services that communities can use for their own development. At such centres, communities are able to access government services as well as a range of information products provided by government and other organizations and are able to communicate back to government from the same locality. Such information access allows for an improvement in the quality of government online service to the people. Governments have the duty to provide for and support the development of all citizens, but many have suffered neglect with respect to Telecommunication

networks. However, a telecentre is only one answer to the prevailing condition of uneven and unequal access to Information and Communication Technologies (Comtask 1996a:2).

1.2 GOVERNMENT COMMUNICATION AND INFORMATION SYSTEM (GCIS)

Generally, there is a clear indication that women, minority communities and illiterates need access to computers and the Internet which hinders their ability to access government information (Gilwald 2001a:12).

In his State of the Nation address (2003:10) the then President Mbeki also alluded to the need for increased access to government information when he said that:

The process to setup a government-wide call centre will be speeded up. In addition, we will start this year to phase in an electronic system, an e-government gateway, in which the directory of government services will be available, according to citizens' needs rather than the silos of the state bureaucracy, an electronic version of the Multi-Purpose Community Centres.

In this regard, Pahad (1998:2) emphasised the need for a two-way communication process when he stated that:

... If we are talking about two-way communication with the poorest of the poor, then our target is to reach the African woman or moreover the African female disabled child in the rural areas. Unless we are able to do this, we will not be doing enough.

Programmes such as South African Information Technology Industry Strategy (SAITIS) is aimed at fast-tracking service delivery and making the service available on daily basis. This project gave birth to the formation of Government Communication and Information System (GCIS) which replaced the South African Communication Services (SACS) following recommendations by the Communication Task Team (Comtask) established by the then deputy president Thabo Mbeki in 1996 (Comtask 1996a:2). The GCIS team serves as a means through which government communicates at local, provincial, and national level to the South African citizens (Communications 2000:1996:10). The mandate of the team is to meet the communication needs of the South African government and its people and to ensure that the public become active participants in changing their lives for the better,

through the knowledge and use of information on government responsibilities. To achieve this, all appropriate forms of media are being utilised in order to provide the required information and promote two-way communication between government and communities. These media include print and electronic media, direct communication with communities through unmediated products and community liaison, the Internet and telecentres.

1.3 HUMAN RIGHTS

In his Marula project speech, then Premier of the Limpopo Province Ngoako Ramatlhodi (2002) mentioned that it was clear that the majority of South African citizens are not aware of their rights to education, health, pension, protection from abuse and do not even have access to the government information concerning their basic rights. Human rights are the rights and freedom to which every human being is entitled and this includes access to information concerning the rights (Ramatlhodi 2002). People want the delivery of service of all kinds in their different categories according to Maila in the *Capricorn voice* (2006:10). Everyone has the right to access to information held by the state or by private persons (Anderson *et al.* 2006:25). The Universal Declaration of Human Rights resolution was unanimously adopted in December 1948 by the General Assembly of the United Nation (UNESCO Report 2000). The objective of the declaration was to promote and encourage respect for human rights and fundamental freedom.

The declaration proclaims the personal, civil, political, economic, social and cultural rights of humans, which are limited only by the recognition of the rights and freedom of others and the requirements of morality, public order and general welfare (Government Gazette Report 2000). Among the rights asked for by the declaration are rights to life, liberty and security of person, freedom from arbitrary arrest, a fair trial, to be presumed innocent until proved guilty, freedom from interference with privacy of one's home and correspondence, freedom of movement and residence, asylum, nationality to ownership of property, freedom of thought, conscience, religion, opinion and expression to associate peacefully to assembly, to participate in government, to social security, to work, to rest, to a standard of living adequate for health and wellbeing, to education and to participate in the social life. This declaration was conceived as the first part of international bills of rights (UNESCO Report 1999).

Rural people are urged to get to know their rights. Some people in rural areas still know little about their rights, says North West Premier Thandi Modise. Modise was speaking to more than 1 000 people on Human Rights Day on 21 March 2012 in Groot Marico near Zeerust. She said while aspiring to be prosperous in the world, South Africa's position with regard to respecting human rights was to embark on education (Sowetan 2012:8).

1.4 PROBLEM STATEMENT

Access to required government information has always been a problem to most citizens. Communities in the remote (semi-urban) areas do not have information; neither do they have easy access to the sources of relevant and required information. The cost of gaining access is enormous and time consuming because it involves traveling a long distance to have physical contact with necessary government officials for relevant information. Knowing one's rights and being able to identify when one's rights have been violated requires smooth and easy access to necessary information.

Economic, social or educational circumstances are also a barrier to accessing government information available online. People should not need to travel long distance before being able to access the Internet through telecentres and Internet Cafés.

Government departments can make their services available online, and ideally, there should be no problem for anyone to access these services anytime and from anywhere. However, the cost of telecommunications has always been a great problem to the citizens, and this has always widened the gap between the people with access to the Internet and hence to government online information and services, and those without such access. In addition, the cost of computers and alternative access cannot be ruled out. Rural communities are largely being denied access to government information – information that would enable them (communities) to make informed decisions about their own development. Eddy (2011) predicts that within the next decade, every individual is likely to have access to Internet via increasingly cheaper but more sophisticated hand-held devices. Mobile data is getting cheaper and might be a better solution to access the information on hand-held devices.

The problem for this study is **an investigation into the lack of effective government information accessibility system for a community in the remote areas of South Africa.**

1.5 RESEARCH OBJECTIVES

The study aims to find out how the community in the remote areas of South Africa access government information, as well as to find out which factors affect the use of telecentres and Internet Cafes by the people of semi-urban areas to access their rights. Specific aspects of these aims are:

- To determine the information needs of the community.
- To identify the dangers/shortcomings of not having access to information.
- To identify the problems associated with providing/accessing the information.
- To find a solution in order to address some (or all) of these issues.
- To communicate/present the results of the study in order to help address these issues.

1.6 RESEARCH QUESTIONS

How does the government information accessibility system impact the community in the remote areas of the Northern Cape and Limpopo Provinces to access information? This can be achieved through answering the following sub questions:

- *What are the information needs of the community?*
- *What are the dangers/shortcomings of not having information?*
- *What are the problems associated with providing/accessing the information?*
- *How is the current study seeking to address some (or all) of these issues?*
- *How will the results of the study be communicated/presented to help address these issues?*

1.7 RESEARCH METHODOLOGY

Research methodology involves the methods and procedures used in implementing research designs (Babbie & Mouton 2003:64). According to (Anderson 2002:10), the research design is a blueprint of a research or the initial planning of a research. It is the arrangement of conditions for collection and analysis of data.

The research findings were based on primary data. The primary data were collected by the researcher from the responses of the community residing in the remote areas of the Northern Cape and

Limpopo Province in South Africa. The research methods used within this study are described in the following section:

1.7.1 Sample and demarcation of study

The sample consisted of 200 community members. For the purpose of this study, the study areas comprised research in the Northern Cape (Heuningvlei and Galeshewe village) and the Limpopo Province (The Oaks and Finala village) in South Africa.

In the Northern Cape and Limpopo Provinces, the study area comprises four remote areas in each province. These two provinces - out of nine provinces in South Africa - were chosen for proximity and access purposes. The four villages are in very remote and poor areas. The Northern Cape has the worst access to telecommunications.

1.7.2 Literature review

Mouton (2001:87) defines a literature review as “a review of the existing Scholarship or available body of knowledge, which helps the researcher to see how other Scholars have investigated the research problem that he/she is interested in”.

The literature study provided an understanding of the provision of access to information and communication services. The researcher utilised a wide range of materials, including textbooks, journal articles sourced through electronic databases, conference papers, government publications, industry publications and the Internet in order to develop a theoretical framework.

1.7.3 Questionnaire

A questionnaire was constructed from the literature by establishing questionnaire items to fit the objectives of this research and interviews were conducted by the researcher. It was decided that only the people residing in the remote areas in South Africa’s two provinces - Northern Cape and Limpopo - including managers and operators of the telecentres and Internet Cafés should be respondents. According to Polit and Hungler (1991:193), a questionnaire is a tool for gathering self-report information from the respondents about their attitude, knowledge, beliefs and feelings.

1.7.4 Data collection

The researcher performed this function in order to reduce the cost of the research project. The primary data collection was conducted through interviews as well as questionnaires designed by the researcher. An interview is fast and reduces typing errors because the information is captured by the researcher. According to Mellenbergh (2008), the Questionnaire method is a research instrument consisting of a series of questions and other prompts for gathering information from respondents. The questionnaire were considered a suitable method by the researcher because they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardised answers that make it simple to compile data.

A questionnaire which was written in English was given to 200 respondents who were conveniently sampled by the researcher in order to ensure that the respondents are able to interpret and answer the questions correctly. All the questions on the questionnaire were fully explained to the respondents. It was explained to the respondents that they had to respond to the questionnaire in their own time, and were requested to please return the completed questionnaires to the researcher by a given date. According to Churchill (1995:433) a questionnaire should be made as convenient as possible for the respondents to complete, as the easier it is for respondents to reply, the higher the likely response rate, which will improve the quality of the research study.

To ensure anonymity the respondents were requested not to write their names on the questionnaire or to make any mark or any other form of writing which may identify the person who completed the questionnaire. It was also emphasised to respondents that they took part in the study of their own free will, and that they had the right not to take part or to withdraw at any stage and their action will not prejudice their residential status (rights) in the village. The issue of informed consent is fully described in chapter 3 of this dissertation.

Quantitative methods are used when the data have been collected in or are soon converted into numbers for analysis (Norman 2004:47). Quantitative research is suited to theory testing and developing universal statements (Schulze 2003:5). It provides a generic picture of a situation and has the advantage of allowing researchers to measure and control variables and evaluates objective data consisting of numbers (Welman, Kruger & Mitchell 2005:8; Edwards 1998:37). In this study a Quantitative method was used. Descriptive, quantitative biographical data (gender, age,

qualification, income and occupation) were obtained from the database designed by the researcher. The researcher entered this biographical data on a database for the purpose of data analysis.

1.7.5 Data analysis

The primary data were captured and processed in a single database, as designed by the researcher. During the research, any encountered problems were resolved by the researcher in order to capture the reliable data, hence quality output was ensured. Data and assessment results were recorded statistically analysed and interpreted.

Analysis of quantitative data was done using the Statistical Package for Social Science (SPSS) computer programme. The data were analysed by the Statistical Analysis Division of the Information and Communication Technology Department at the North-West University, Potchefstroom Campus. Descriptive and inferential statistics were also used in the data analysis and summaries included tables, graphs and figures. The researcher presented frequency tabulations for each of the following categorical variables, namely gender, age, qualifications, access to computer, time spent using computer, method to access information, internet connectivity, maintenance of telecentres, distance to reach telecentre, method of transport and telecentre awareness. Tables and statistics were applied in the research study.

1.7.6 The concept of validity

Validity is defined by Johnson and Christensen (2004:140) as the accuracy of the inference, interpretation or actions made on the basis of test scores, while Leedy (1993:40) explains that validity is concerned with the soundness and the effectiveness of the measuring instrument.

To ensure internal validity, all respondents used the same questionnaire. A pre-test of the instrument was also done to ensure construct validity, where upon five community members were asked to respond to the questionnaire to ensure that it measured what was intended. A pre-test of the instrument used in this study is described in chapter 3 of this text.

1.7.7 The concept of reliability

Reliability is the consistency with which a measuring instrument yields a certain/similar result when the entity measured hasn't changed (Leedy & Ormond 2005:29). The consistent way in which all the data were processed and analysed by means of statistical packages undoubtedly contributed to the reliability of the study. More detailed information on how reliability was ensured in this study is provided in chapter 3.

1.7.8 Ethical considerations

Ethics are norms or standards of behaviours that guide moral choices about our behaviours and our relationships with others (Cooper & Schindler 2003:120). The following ethical issues that are relevant for a study were adhered to:

- Participation in the study will be voluntary. Respondents will not be forced to participate in the study.
- The questionnaire will not contain the names of respondents – anonymity of respondents will be maintained.

The following code of ethics was used by the researcher during the survey:

- The researcher will request permission to have respondents' time to complete the questionnaire.
- The researcher will not contain any questions detrimental to the self-interest of respondents.
- The researcher will not mislead any respondent who will participate in the study.
- The researcher will assure respondents of anonymity and confidentiality of the data collected.
- The researcher will thank respondents who will participate in the survey.

Informed consent (see Addendum C) was obtained from all respondents in this study, following detailed information about the purpose and objectives of the study. This was done to ensure that all respondents who participated were aware and willing to be involved in the study. A copy of a letter of request, which states the purpose of the research, is included as addendum B. The proposal to

conduct this study was presented and approved by the mayor of Sol Plaatje and Maruleng municipalities.

1.8 LIMITATIONS OF THE STUDY

This study was confined to the communities of remote areas in the Northern Cape and Limpopo Provinces in South Africa. Therefore, generalising the results reported in this research to other provinces around South Africa should only be done cautiously.

1.9 PILOT STUDY

A pilot study was conducted on each of the measuring instruments which were refined for use in the main methodology of the study. According to Barker (2003:327-328), a pilot study can be defined as a procedure for testing and validating an instrument by administering it to a small group of participants from the intended test population. The one who participate in the pilot study should not participate in the main enquiry (Rubin & Babbie 2005:219; Unrau, Gabor & Grinnell 2007:179).

1.10 DEFINITION OF TERMS

Information Technology – any computer-based tool that people use to work with the information processing needs of an organisation.

Remote – refers to areas which are far away from towns or cities. In this study, the remote areas are Heuningvlei, Galeshewe, The Oaks and Finala.

Semi-urban – refers to areas that are rural/non-urban. It is a place which is situated in non-urban areas; that is, outside a town or city.

Village – refers to a rural area which is far away from the city.

1.11 STRUCTURE OF THE DISSERTATION

This study consists of five chapters:

CHAPTER 1: Introduction

This chapter 1 provides the background of the study at hand. The problem statement, the research objectives, questions, research design and methodology, limitations, as well as the pilot study, are outlined.

CHAPTER 2: The literature review

This chapter provides the literature study. This includes the definition of information, e-government, telecentres, as well as the digital divide.

CHAPTER 3: The research design and methodology

This chapter is the methodology of the research. This includes the process through which the research was carried out. The gathering of data, target population, research question, piloting of the instrument, data analysis, validity, reliability and ethical consideration were outlined.

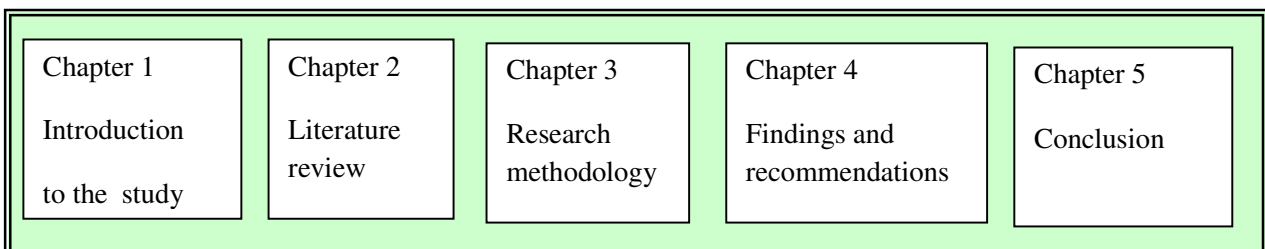
CHAPTER 4: Findings and recommendations

Specific findings and recommendations for further research is also explained. Limitations are outlined and the findings are illustrated by means of tables, figures and graphs.

CHAPTER 5: Conclusion

This is a final chapter where specific findings and conclusion derived from the research are discussed.

Figure 1.1: A conceptual outline of the dissertation



1.12 CONCLUSION

This chapter presents a background on which the problem is based. The problem statement is outlined, whilst the research questions and research objectives are stated. The research design and methodology that were implemented were discussed, which included aspects such as sample and demarcation of study, literature review, Questionnaire, data collection, data analysis, validity, reliability, ethical considerations and limitations of the study. The aim of establishing telecentres is to improve community accessibility to information, which hopefully will improve community development, education and promote computer literacy, if made available in the remote areas. The researcher concludes this chapter with an outline of the dissertation.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

A literature review is a means of collecting and organising the results of previous studies in order to produce a composite of what has already been learned about a particular topic (Schwandt 2001:229). Mouton (2001:87) defines a literature review as “a review of the existing Scholarship or available body of knowledge, which helps the researcher to see how other Scholars have investigated the research problem that he/she is interested in”.

In this study, the literature survey was undertaken across a broad spectrum of sources including conference papers, journals, government policy documents and several Internet sources. McNeill and Chapman (2005:31) state that every research project, of whatever status, should spend time reading what other people have written about the topic or field in which they are interested. The main goal of a literature review is to gather a basis for the practical work and to show that the researcher is familiar with existing literature and research on the topic.

The provision of access to information and communication services is currently seen as a key factor to accelerating development in most parts of Africa. Until recently, the high cost of providing basic telecommunication services limited the potential for widespread access to information and communication facilities. Information Technology is opening up new possibilities and frontiers. The increasing use of Information Technology has made possible new methods to deliver services and to supplement existing ones (Owen & Darkwa 2000:1 of 8).

Since the 1990s, South Africa has witnessed a host of new policies and development initiatives, which are relevant to the dissemination of information to grassroots communities and to the general population. Some of these initiatives are specifically concerned with government information, since the effective transfer of government information to the public is an important requirement for the transformation process and the empowerment of people (Lewis 2003:44).

Based on this fact, the South African Government effort is directed towards creating access to modern telecommunications in order to help the disadvantaged population in both urban and semi-urban areas to overcome vital obstacles in accessing their rights. Other initiatives are concerned

more generally with effective delivery of information to the population. In addition, in his State of the Nation address (2003:10) in 2003, President Mbeki announced the government's intention to speed up a process to set up a government-wide call centre. This centre's role is to make a directory of government services available to the people.

Following South Africa's transition to democracy in 1994, the South African government has adopted policies supporting freedom of expression and freedom of access to information. The Bill of Rights in the new Constitution includes a constitutional right of access to information held by the state (Lor & Van As 2002:102). Since 1994 various initiatives have been taken by government and other bodies to promote such access. These include moves to reorganize government printing and publishing, restructure the government's public information services, make government information available on the Internet, and extend telephony and Internet access to poor communities. SA's new Legal Deposit Act (1997) makes provision for the creation of official publications depositories. The Promotion of Access to Information Act (2000) was enacted to ensure access to information held by the state and public bodies. However, despite much activity, it has proved difficult to translate principles into practical and well-coordinated measures to improve access to government information. A specific concern is the failure of policy-makers to visualize a role for libraries (Lor & Van As 2002:102).

In his speech at the World Summit on the Information Society in Tunis, Tunisia in November 2005, the President Thabo Mbeki expressed his hope that the Summit in Africa would underline the need to do everything possible to promote the use of modern information and communication technologies to help extricate the poor of Africa and the world from their condition of underdevelopment, marginalisation and social exclusion.

“We believe that it is imperative that the decision we take should fully reflect the desire we expressed in the Declaration of Principles we adopted in Geneva in 2003 “to build a people-centred, inclusive and development-oriented information society...enabling individuals, communities and people to achieve their full potential in promoting their sustainable development and improving their quality of life.....

Our country and continent are determined to do everything possible to achieve their renewal and development, defeating the twin scourges of poverty and underdevelopment. In this

regard, we have fully recognized the critical importance of modern ICTs as a powerful ally we have to mobilise, as reflected both in our national initiatives and the priority programmes of New Partnership for Africa's Development (NEPAD).

We are therefore determined to do everything we can to implement the outcomes of this World Summit on the Information Society and appeal to all stakeholders similarly to commit themselves to take action to translate the shared vision of an inclusive development-oriented information society into practical reality" (Mbeki 2005:1 of 1).

Geraldine Fraser-Moleketi, the former Minister of Public Service and Administration (2002), mentioned that it is government's goal to ensure that every South African is only five to ten minutes away from government services, either physically or electronically, within the next ten years. She said. "All South Africans do not have access to information and communication technologies and, as such, there is a large digital divide between citizens. "If the country's e-government strategy is to be a success, access to service must be open to each and every citizen, regardless of his or her geography, income or cultural background," (Botha 2002:1 of 4). The researcher is of the opinion that it is evident from the above quotation that the establishment of telecentres and Internet Cafés is needed in semi-urban areas. This is necessary because if the community does not have access to government information, they will not be able to participate in the government activities.

2.2 INFORMATION

Information is the basic element of knowledge; if the meaning of the information is developed, it results into knowledge (Coetsee 2002:32). The researcher is of the opinion that in most organisations, decision making is based on information. The information received by management needs to be accurate and up-to-date and it must also be communicated back to the people.

According to Scheeder (2008:3), information is understood as facts told, heard or discovered. Information leads to understanding and understanding leads to a sharing of goals. When managers do not share information with their employees, they let imagination run wild, which leads to frustration, lack of innovation and involvement (Bouthillier & Shearer 2002:3). Sharing information must have a business purpose at its roots. Sharing information should support business decision-making or propel innovation. To support this, there must also be a structured process by which to

capture and use the uncovered information. Beneficial information-sharing activities are capturing problem-solving conversations by other employees so that others in the organisation can benefit from their expertise (Achterberg 2001:1).

According to Ellis (1998 cited in Rosenberg 2001:11) access to relevant and up to date information is crucial to economic and social development: “Information is a vital national resource. As a healthy and prosperous community cannot survive without an adequate supply of clean water, so, too, no modern economy and no modern society can function without a reliable flow of quality information”. One of the most counterproductive rules in business is to distribute information based on a “need to know” basis. This severely, unnecessarily, and destructively restricts the flow of information in an organisation (Sirota *et al.* 2006:1).

Some studies have found that the most common reason citizens visit e-government websites is to obtain information (e.g. Thomas & Streib 2003:90 and Misnikov 2005:2). Yet the World Wide Web is a global information resource comprising information from various autonomous sources, with no control over the content available online. Information is the basis upon which decisions are made, thus quality is essential to enhance accurate decision-making. Peppard and Rylander (2005:338) state that information defines the products and services availed online.

The researcher is of the opinion that information has a key role to play in rural communities. Although the return on investment might not be measured in monetary form, information should at the end enable the community in the semi-urban area to share and exchange information, make full use of information assets, and improve on responsiveness to request for information. It (information) serves as a tool for communication between the government and the citizens. In order to improve service delivery to the previously underserved areas such as Heuningvlei, Galeshewe, The Oaks and Finala in the Northern Cape and Limpopo Provinces, information must be easily accessible and up-to-date.

Richard Baloyi, Minister for Public Service and Administration, in the service Delivery Review (2008:9) states that one of the good policies that the government has developed is the Transformation of Public Service Delivery, commonly referred to as the Batho Pele policy, which provides a framework and practical implementation strategy to put people first as we see the rollout of services provided to the public that we all have to serve. Maserumule (2007:90) refers to Batho

Pele as a concept reflecting the imperatives of Ubuntu, which is an African philosophy of humanness.

2.3 DEFINING E-GOVERNMENT

Turban, McLean and Wetherbe (2004:205) describe E-government as “the use of Internet technology in general and e-commerce in particular to deliver information and public services to citizens, business partners and suppliers, and those working in the public sector. It is also an efficient way of conducting business transactions with citizens and businesses and within the governments themselves”.

According to Laudon and Laudon (2010:92), E-government refers to the application of the Internet and networking technologies to digitally enable government and public sector agencies’ relationships with citizens, businesses, and other arms of government. In addition to improving delivery of government services, e-government can make government operations more efficient and also empower citizens by giving them easier access to information and the ability to network electronically with other citizens. For example, citizens in some states can renew their driver’s licenses or apply for unemployment benefits online, and the Internet has become a powerful tool for instantly mobilising interest groups for political action and fund-raising.

The general interest in e-government is further illustrated by the third annual update on global e-government (West 2003:2 of 19). E-government can be defined as the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees (Abramson & Means 2001:4 of 24). A well-accepted definition by McClure *et al.* (2000:2 of 11) explains that “government’s use of technology, particular web-based Internet applications, enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and government entities.” As West (2000:2 of 2) argues, “E-government refers to the delivery of information and services online through the Internet and other digital means”.

2.4 ELECTRONIC GOVERNMENT BENEFITS AND CHALLENGES

The implementation of electronic government (e-government) has been widely acclaimed in that it provides new impetus to deliver services quickly and efficiently (Evans & Yen 2006:208). In recognition of these benefits, various arms of the South African government have embarked on a number of e-government programmes. Examples of these include inter-alia, the Batho Pele portal, SARS e-filing, the e-Natis system, electronic processing of grand applications from remote sites and a large number of departmental information websites. Notwithstanding a number of well published e-government ventures such as the latter, analysts and researchers such as Farelo and Morris (2006:11) consider the state of e-government in South Africa to be at a rudimentary stage.

E-government involves using information technology (IT), and especially the Internet, to deliver government information and in some cases services to citizens, business, and other government agencies (West 2004:16).

E-government is intended to enhance the ability to collect and share information about government. Some of the key issues to be addressed in achieving this are the necessity of addressing the needs and facilitating the use of e-channels by disadvantaged groups in the implementation process and of building trust and confidence in e-services. The major advantages of e-government are that it would achieve greater transparency, revenue growth, cost reduction, and convenience to local citizens if given priority by the government (Bonham *et al.* 2001).

E-government explores the use of the Internet and ICT to further the goals of good administration by functioning with transparency and providing access to information to the public. By creating a friendlier and more pro-active interface, it can strengthen the fundamental partnership between the public sector and the private citizen. E-government will favourably impact on the productivity and performance of the public sector and foster new and deeper citizen involvement within the government process. E-governance, by strengthening transparency and accountability, is one of the most important means to curb corruption (e-government 2005).

However, the e-government challenge is not a technological one. Rather, the challenge is to use technologies to improve the capacities of government institutions, while improving the quality of life of citizens by redefining the relationship between citizens and their government (Gautrin 2004:2 of

14). Initially, e-government may seem like another option for communication with citizens. But in the face of rising demands from demographic, economic, social, and global trends, e-government no longer appears to be a matter of choice, but a necessity for any country wishing to enter the 21st century as a competitive nation in the world arena.

The potential benefits offered by e-government is that it improves the efficiency and effectiveness of the functions of government, including the delivery of public services, It enables governments to be more transparent to citizens and businesses by giving access to more of the information generated by government and also offers greater opportunities for citizens to provide feedback to government agencies and to participate in democratic institutions and processes (Turban *et al.* 2004:205).

In light of the above, the researcher find himself agreeing with the authors cited above and add or mention the following benefits of e-government:

- *Cost effectiveness*

Cost for rendering service will be reduced.

- *Improve communication*

Communication between governments and citizens will be improved in order for citizens to have up-to-date information.

- *Time saving*

Reducing delays in delivery of services. This will minimize the number of protests by citizens.

The Department of Home Affairs has promoted the vision on re-defining the relationship between government and citizens. A smartcard ID was developed that focuses on the automation of finger prints and the development of an electronic Population Registry. Through its Home Affairs National Identification Systems (HANIS) projects citizens can access birth and death registration forms online. To the extent that it has increased transparency, accountability and predictability (of rules

and procedures) which are made priorities, e-government may offer a weapon against corruption (Farelo & Morris 2006:4 of 12).

The following are the intended e-government services offered in South Africa telecentres:

- E-government services offer citizens an easy way to accomplish their work anytime and anywhere.
- E-government offers the public with Internet tools to communicate with their representatives.
- Citizen participation is possible through e-government processes whereby the community members directly log on to the website of the municipality they reside in, email the feedback and concern to the relevant councillors for improvement.
- Students can use the telecentre to submit assignments to the Institutions such as University of South Africa (UNISA).

2.5 DEFINING INTERNET.

The Internet was therefore defined as a world-wide interconnected network of computer networks (Bothma 2000:2-3).

Howe (2010) defines the Internet as the product of visionary thinking by certain people in the 1960s who saw great potential value in allowing computers to share information on research and development in the scientific and military fields.

Leiner, Cerf, Clark, Kahn, Kleinrock, Lynch, Postel, Roberts and Wolf (2011) describe the Internet as a system with worldwide broadcasting capabilities, a distribution system of information and a tool for collaboration and interaction between individuals and their personal computers, without the concern of geographical locations.

In today's technological society, the use of the Internet has become an imperative for companies operating in highly sophisticated markets (Malecki & Moriset 2008:2 of 17). Internet provides significant opportunities for companies to seek and adopt innovative practices in order to address the increasing demand of consumers (Sharma & Aragon-Correa 2005:2 of 17).

The Business Dictionary.com (2009c) explains that the Internet is also called the ‘information superhighway’ and the ‘network of networks’, and is basically a means of connecting a computer to another computer anywhere in the world. When two computers are connected over the Internet, they can send and receive all kinds of information such as text, graphics, audio, video and computer programmes.

2.6 CHALLENGES IN USING THE INTERNET

2.6.1 Economic development in South Africa

The challenges for using the Internet for development in South Africa are not entirely divorced from those challenges that confront sub-Saharan Africa as a whole. Conradie and Jacobs (2003:5 of 13) have outlined six challenges that South Africa is facing. The first of these challenges is striking a balance between technology and the need for local development. Like most African countries, South Africa faces the challenge of bringing ICT to the rural areas. The need to satisfy the exigencies of the local indigenes and at the same time develop other sectors of the economy that do not warrant technology is one of the main tasks that the country is facing. One of the major setbacks for technology is consulting with local chiefs and councillors and making them see the need for Internet in their area.

Conradie *et al.* (2003:5 of 13) argue that since technology is coming from outside, it does not address the local problems. Some of these local problems involve literacy in technology. The number of Internet illiteracy in South Africa is alarming given the fact that education quest for most of them in the past had been sacrificed in the fight for liberation. Now that another new education (Internet communication) is coming to the forefront, there has to be adequate infrastructure within the rural setting itself to educate the people on how to use the technology. Another problem that the country is facing is long queues to the Internet Cafes that are formed in the rural areas.

Another challenge that South Africa is facing according to Conradie *et al* is the fact that “many rural areas in South Africa do not yet form part of the national electricity grid” (Conradie *et al.* 2003:31).

The researcher finds himself agreeing with Conradie *et al.* who state, “Many rural areas in South Africa do not yet form part of the national electricity grid” The lack of affordable access to relevant

information and knowledge services among the rural poor has been a concern. The researcher originally comes from a rural area where there were no communication mechanisms. Why information? The simple answer is this is the main concern in the rural poverty communities and Information and Communication Technology infrastructure is often underdeveloped, the rural population themselves are not conducive to ICT absorption, and ICT is not an area that has been well-integrated in rural poverty reduction strategies and often narrowly defined as modern technologies.

Conducting everyday activities such as cooking was still done in the olden ways where people including myself used to go to the field to fetch firewood's and river to fetch water so as to enable the family to have a cooked meal but with the developing technology, electricity was introduced and people started buying electrical appliances and running water through taps was also introduced to make our lives easier. If technology hadn't progressed we wouldn't have in our house things like the microwave, or the washing machine, TV set, music systems and computers etc.

A Sophos White Paper (2008) states that "with a brand new webpage created every 14 seconds, the web has now become the key sector for online hacking attacks, as well as representing a drain on productivity for many businesses". With all the benefits that the Internet has heralded in communication, there are a number of challenges that arise as well, such as abuse. According to Willson (2000:199), "the very same business tools that contribute to increased productivity of the workforce can be used as a mechanism for cyber slacking". This-party filtering and blocking of software are significant ways of controlling and limiting such losses. Controls should be put in place to prevent access to certain websites that are not work-related (Willson 2000:199).

Internet abuse by users causes low productivity and unnecessary costs to the organisation. However, the researcher finds himself agreeing with Willson because truly speaking most of online systems are exposed to risk by hackers and viruses (Willson (2000:199). The researcher has also implemented a system/software called Untangle at Sedibeng Water Board which monitors time spent on the Internet by each employee and by site address. The purpose is to eliminate or prevent users to visit sites that are not work-related such as soccer, radio stations, pornography, lottery, etc.

2.6.2 Access

The statistics released by the Communications Minister Dina Pule (2012) in her address at the inaugural ICT Indaba 2012 in Cape Town. She mentioned that ICT was central to the country's development with Internet alone directly contributing about 2 percent to economic output. She also mentioned that more than 6 000 000 people had access to the Internet, with much of this attributed to a growth in mobile broadband access on smartphones.

In his speech at the ICT Indaba 2012, 7th March, Deputy President Kgalema Motlanthe said that Information and Communications Technology presents an opportunity for Africa to expedite its growth and development. In 2011, only 5.7 percent of the population of Africa had access to Internet. In global comparison, while Africa accounts for 14 percent of the world population, only 3.6 percent of Internet subscribers are Africans. The above statistics should be a cause for concern for us as the leadership of Africa. Surely we can do more to improve access to ICT by ensuring more connectivity to local schools, libraries, science centres, health centres, in both urban and rural areas. There is no doubt that ICT is the key to knowledge sharing and access to information (Motlanthe 2012:1 of 2).

2.7 ELECTRONIC MESSAGE SYSTEMS (E-MAIL)

ARMA International (2000:8) describes e-mail as “a system that enables users to compose, transmit, receive, and manage electronic messages and images across networks and through gateways connecting to other local area networks” (LAN). According to Southern Africa Communications for Development (SACOD) (2002:374), “e-mail is simply another term for mail”.

E-mail, the electronic exchange of messages from one person to another, was one of the original features of the Internet. E-mail enabled scientists and researchers working on government-sponsored projects to communicate with their colleagues at other locations. Today-mail still is a widely used Internet feature (Shelly, Cashman & Waggoner 1997:148).

An e-mail system allows messages to be exchanged between computers fitted with a modem, regardless of where they are located. This method may also be used to send messages to a laptop or

notebook outside offices, ensuring it is connected to a data-capable digital mobile telephone using a special interface card (Horsfall & Cairns 2001:241).

Laudon and Laudon (2010:294) mention that e-mail enables messages are capable of being exchanged from computer to computer, with capabilities for routing messages to multiple recipients, forwarding messages, and attaching text documents or multimedia files to messages. Although some organisations operate their own internal electronic mail systems, most e-mail today is sent through the Internet. The cost of e-mail is far lower than equivalent voice, postal or overnight delivery costs, making the Internet a very inexpensive and rapid communications medium. Most e-mail messages arrive anywhere in the world in a matter of seconds.

The researcher is of the opinion that if the community of rural areas can be given access to ICT, they can be able to communicate and receive information through e-mail. Email is certainly one of the services offered by the Internet that is most often used and it must also represent one of the benefits of the Internet. Factors such as time, distance and cost involved in sending a letter by mail (post office) are eliminated.

2.8 TELECENTRES

Telecentres are public places where people have access to computers, the Internet and other information and communications technologies that enable them to gather, create, learn and communicate information for social and economic development. Beyond the issue of connectivity, telecentres provide an opportunity for accessing and using appropriate digital technologies to solve problems and assist developmental activities, for instance, by supporting the community's economic, educational, health and social development so as to bridge the digital divide (Gurung 2009:1 of 3).

A typical telecentre refers to a place providing “connectivity and access to information via a range of information and communication technologies including phone, fax, computers and Internet” (Bailur 2007:62). They can be run commercially as small businesses with some non-commercial features or they can be run by community organisations as non-profit and subsidised facilities first and foremost for community benefit (Dymond *et al.* 2008:2 of 23). Similarly, Reilly and Gomez (2001:2 of 11) view telecentres as any physical place that provides people with ICTs for personal, educational, economic and social development. Rochild (2008:2 of 11) posits that telecentres are public places

that provide people with the opportunity to have access to computer and Internet as well as other ICT services, which otherwise they would not have access to. He further stated that beyond the issue of connectivity, telecentres also provide people with the opportunity to access and utilize appropriate digital technologies to tackle their problems and also assist them in their development activities.

However, irrespective of how a telecentre is defined or viewed, the fact remains that they offer shared premises where the public can access information and communication technologies and function largely within the ideology and vision of bridging the digital divide (Colle 2005; Whyte 2001).

The researcher is of the opinion that telecentres are telecommunication access points deployed in under-serviced areas, mainly semi-urban areas, townships and informal settlements, where people need to travel some distance before getting to communication services. One of the reasons to establish telecentres was to provide the citizens of South Africa with accurate and up-to-date information regarding various subjects of interests including governance.

2.9 RESEARCH ON SOUTH AFRICAN TELECENTRES

A Limpopo Province Telecentre community research study was conducted by the Vodacom Link Centre in Gauteng. According to Benjamin (2001a:12) the centre conducted research on six such telecentres. The research was funded by the Independent Development Research Centre (IDRC) and conducted by people residing in the communities where the telecentres are located under the guidance of Link Centre researchers. The study ran from February to October 2000.

The results of the telecentre community research indicated a number of contrasts between Limpopo province centres:

- Phalala and Mothapo were both “making money, supported in their community”.
- Botlokwa telecentre experienced tension with local organisations that felt that the centre was not run well;
- Mankweng telecentre was operating despite competition from telephone and computer service companies. Mankweng experienced a burglary and loss of computers and other equipment.

Among the conclusions drawn from this experience are:

- Telecentres must be fully equipped by the former Universal Service Agency (USA) now known as the Universal Service and Access Agency of South Africa (USAASA) to operate properly;
- Vandalism and theft indicate that property should be secured;
- Telecentres with local support succeed;
- The USA must support telecentres by providing equipment, technical training, funding and financial management training;
- Telecentres are designed to be a government subsidized universal access facilities for the rural poor, who are not able to afford to pay some telecentre bills; and community members could participate in research to solve local ICT problems.

The Kutu Mphahlele and Maepa (2003) telecentre study was conducted in Limpopo Province and indicated that access to ICT was regarded by the South African government as important in enhancing the quality of life in rural communities. They perceived a need for telecentres in Limpopo, but maintain that for telecentres to succeed, the following factors are important:

1. Ensure community support and ownership of the centres which is crucial for telecentre sustainability;
2. Secure centre equipment; and
3. Telecentre managers should possess sound managerial skills.

Benjamin (2003:19), who conducted a few studies on South African telecentres, identified deficiencies, concluded that telecentres do have a role to play in educating the South African public.

A few of the USA's telecentres have been very successful, such as Mamelodi in Gauteng Province, Gaseleka in Limpopo Province and Acornhoek in Mpumalanga Province. However, many are struggling with the technology not funding much application.

Yusop *et al.* (2009) and Abdul Razak (2005) claimed in their study that location is an important factor that can lead to the success of a telecentre. Islam and Hassan (2009), in their own part, argued

that location of telecentres is very important and therefore state they should be in a place where people frequently visit and where they can easily gain access to.

2.10 THE DIGITAL DIVIDE

2.10.1 Digital divide defined

The definition of digital divide in literature is one that highlights the growing gap in technology between the more and less fortunate groups with regards to technological advances (Jacob & Herselman 2006:77).

According to Mutula (2005), the digital divide refers to the different levels of access by citizens to Information Technology (i.e. Internet services and ICTs). Lau (2003) claims that digital divide is one of the main barriers for implementing e-government in developing countries since most citizens- especially those in rural areas- do not have access to the Internet and will not be able to benefit from e-government online services.

Digital divide is defined by Cullen (2003:247) as the metaphor used to describe the perceived disadvantage of those who either are unable to or do not choose to make use of ICT in their daily lives.

The term digital divide refers to the gap between those who have access to information and communications technology and those who do not often referred to as the “haves” and “have nots.” Typically, the digital divide is thought to be based on physical access to computers and other types of related technology (Morley & Parker 2006:245).

ICT can reward those who use it well with increased economic opportunities and income, better quality of life, and cultural and political advantages. Those who do not use it are left behind, and ICT disparities exacerbate existing inequities. The overall trend is that privileged countries and groups acquire and use ICT more effectively, and because the technology benefits them in an exponential way, they become even more privileged (Bridges.org 2005:14).

According to Chisenga (2004:2 of 18) governments in Africa are the major producers of public information and could therefore contribute to bridging the digital divide by making information

available to their citizens via the Internet. Governments in developed and developing countries are making increasing use of electronic to interact and communicate with another and with their citizens to deliver more effective services (Kroukamp 2005; Mnjama & Wamukoya 2007:2 of 18).

Wijewardena (2004:4) points out that, in order to bridge the digital divide, a clear understanding of the underlying causes of the digital divide is necessary for the development of policy prescriptions.

2.10.2 Causes of digital divide

In this study the researcher states that an example of 'information poor' are the communities in the semi-urban areas such as Heuningvlei, Galeshewe, The Oaks and Finala because they don't have access to information therefore they don't know what is happening in South Africa. This is supported by research conducted by Wresch in 1996, who wrote that "the poor are excluded from much of the world's information and no one has even begun to outline a solution to the problem" (1996:58). In his view, one of the biggest ironies of the information age is that the rich get their information almost free, while the poor have to pay dearly for it, in the case for instance of the price poor people have to pay to make a simple telephone call. The notion of exclusion is thus an important consideration in some of the literature in this review.

Attempts to discuss to address the digital divide problem through a focus on providing hardware and software without paying sufficient attention to the human and social systems that must also change for technology to make a difference have led to the failure of technology, projects around the world. Such example support the statement that "*a digital divide is marked not only by physical access to computers and connectivity but also by access to the additional resources that allow people to use technology well*" (Warschauer 2003:6).

On the surface, the problem of bringing an end to the rural-urban digital divide does not appear to be too difficult. It seems as if all that would be required is to go to a number of such underdeveloped rural areas and to provide and install the necessary information technology infrastructure and equipment that has been lacking there up to now. However, Conradie and Jacobs (2003:30-33) stated that unfortunately there are many examples of well-funded rural development initiatives in Africa that have proceeded from this premise, but that have failed to provide any meaningful benefits to the local communities involved. Conradie and Jacobs (2003:33) conclude their findings by highlighting

the importance to realise that ICT usage cannot be seen as a stand-alone sustainable activity in the rural environment, but rather as an activity in support of something else (for example promoting education, health, or government information actions).

According to Carr (2004:23 of 102), digital technologies are ‘infrastructural technologies’ – their impact has been as strong and widespread as electricity and transportation. They are no longer merely ‘nice to have’ but are fundamental to integration and inclusion. New ICTs leads to a digital divide, not only between rich and poor countries, but also within nations.

In South Africa, according to Mogale (sa:1), centres were established in some part of the country as a way of addressing the digital divide problem. According to Benjamin (2002:11-12) the main thinking surrounding ICT centres in South Africa came from the ANC-aligned structures in the early 1990s, especially the Centre for Developing and Information and Telecommunication Policy (CDITP). This thinking led to the process of drawing up the Green and White Papers on telecommunications that led to the Telecommunications Act 103 of 1996.

2.11 INFORMATION AND COMMUNICATION TECHNOLOGY

Rao (2006:492) defines ICT as a range of technologies that integrate information technology devices like personal computers with communication technologies such as telephones and telecommunication networks. Both the range of the technologies and their convergence with conventional media are expanding all the time.

Rural areas lag behind in terms of ICT access. Factors contributing to this include illiteracy, lack of computer skills, and lower household incomes (Conradie *et al.* 2003:23 of 102). The major factors preventing rural regions from benefiting from ICTs are quality and cost, as well as low penetration of landline telecommunication services.

The researcher is in agreement with the authors cited above (Conradie, Morris & Jacobs 2003) that people in the semi-urban areas are still using radio as the method of receiving or accessing information. Although the radio does not give them all the news, these people are saying it is affordable for their lifestyle rather than ICT (Internet).

According to Rogers and Shukla (2001:2), ICT provides an opportunity for the disadvantaged to be involved in the decision-making process by connecting them to the other end of the decision making process. This means that the disadvantaged are enabled by the technologies to determine their own future. Additionally, these technologies can provide timely information about social problems and their possible solutions.

Information and Communication Technologies have revolutionised the rate at which information is transmitted to regions. ICT has made it possible for messages and data to be transmitted cross the world in minutes or even seconds, defying time, distance and space (Mlitwa 2004:5).

The researcher is of the opinion that ICT is for all people and companies in the world. It has influenced the way people live and the way in which business is conducted globally. People who want to improve their lives must stop doing business in traditional ways. Technology is a must for everyone. Gone are the days in which old people were communicating by posting letters through Post Office. Today new technology use e-mail to send messages. There is no delay compared to Post Office method. Nowadays you press a button immediately the information is received. Technology has changed the way people live.

Kutu Mphahlele and Maepa (2003) note that “access to ICTs is regarded by government as important in enhancing the quality of life in rural communities” (2003:218). This access to ICTs means access to information and access to information is the “key in social and economic activities that bring about development” (Harries 2001 in Onkaetse Mmusi:161).

Researchers have noted that in Africa, and in the province of Kwazulu-Natal (KZN), service delivery is often poor because modern communication technology is not utilized or not available (Ntetha 2010).

During the course of the present study, the researcher observed that most people in the rural areas believe that old technology such as radio, television and community meetings is still good for them to receive information. Reasons for this might be:

- Not having money to use new technology (affordability);
- Afraid of learning new things. An example, searching information on the website; and

- Afraid of change. An example, to learn how to use a computer.

However, the researcher disagrees and argues that old technology does not meet the requirements of today's environment and culture. The new technology such as wireless technology, computer and the Internet are the best method to be used to access information because information is received with a press of a button at the same time anytime and anywhere. With a radio and television, information is received at the specific time and they don't broadcast the full information.

2.12 CHALLENGES OF ACCESSING ICTs

Access is defined by Black and Atkinson (2005) as the ability to gain reliable physical access to ICT resources at reasonable levels, for example fully functioning computers with dial-up or faster Internet access. As ICTs changes the number of barriers to technology, access can increase and change. Cullen (2002) and Rao (2003) identified the barriers to using ICTs in the rural areas as comprising:

2.12.1 Lack of computer/ICT skills

There are low levels of computing and technology skills. Manual workers unemployed are exposed less to such opportunities, cost, restricting access to equipment; low educational achievement; culture, age or gender based exclusion from literacy and computer skills counteracts against the dissemination of such skills in disadvantaged communities.

2.12.2 Lack of access facilities

Access facilities include computers and connectivity in rural areas. The cost of computers is still beyond the purchasing power of the majority of individuals in developing countries. The internet is often far too expensive to be accessible to ordinary citizens and most public service institutions. It is often available only in centres, where most Internet Service Providers (ISPs) have their market.

2.12.3 Lack of motivation to use the Internet

People in the rural areas will not use the Internet to access information unless someone motivate them to do so. Despite connectivity, the modality of Internet access requires a certain level of

competence from the user that many individuals in the community do not have. The Government must provide the community with high-speed Internet at reasonable prices. A high Internet speed will encourage more communities to use e-government/telecentre services because they will see for themselves the difference between performing certain tasks manually (i.e. using hardcopies) and performing them online via the e-government website at the telecentre, which would only take a few minutes.

2.12.4 Age

Meso, Musa and Mbarika (2005:120) point out that age is a factor that influences perception of an individual towards new technologies and that older people have higher levels of technologies of cyberphobia. Thus, age is a key factor in the acceptance of technology in the organisation (Kripanont 2006). Africa is predominantly a patriarchal continent (Coetzee 2001), and typically, aged males are preponderant in corporate leadership.

2.12.5 Afraid of computers / technology

Most of the middle-aged people in the rural areas are afraid of using computers because they don't trust them. These people regard the new technology as a threat because during their teenager years, computers were not available in the village and were not even taught and learned at schools. Therefore, they are now seen as being made for younger people. This is supported by, in 2002, the following recommendation from the National Curriculum summed up the future of technology acquisition for South African children (Johnson 2009).

A complete new learning area (public schools in South Africa), namely technology, is introduced as compulsory school subject to be taught in the foundation (Grades 1-3), intermediate (Grades 4-6) and senior phases (Grades 7-9) of the general education and training band (first nine years of schooling) in South African Schools the new technology learning areas do in fact have the potential to make education more relevant to the South African society (Potgieter 2004:208-209). Education is the key to life. It opens all closed doors. It is never too late for the people in the remote areas to learn to use computers if one looks at how quickly and effectively people became used to cell phones.

2.13 THE UNIVERSAL SERVICE AGENCY (USA)

The Universal Service Agency came into existence in 1996 when one of the new South African democratic government programmes was to redress the country's telecommunication system. The primary objective of the Telecommunication Act 103 of 1996 was to promote a universal and affordable communication services to all citizens. This led to the establishment of the Universal Service Agency to promote access to telephone and other (ICTs) throughout the country, with particular emphasis on the disadvantaged rural areas and townships. The Universal Service Agency (USA, previously called the USAA and now known as the Universal Service and Access Agency of South Africa or USAASA), also believes that telecentres offer forms of social and economic development such as use of the Internet for information, computer training and linkage with stakeholders via telephones and e-mail.

According to Benjamin (2001) research has been done on telecentres. The findings of his study state that 65 telecentres were established by the USA by the end of 2000, 11 'mini-telecentres' and 54 full telecentres. They were in all of the nine provinces of South Africa. All are in disadvantaged areas of South Africa, the great majority in rural areas. About a third of the USA telecentres were not operating at all at the time of this study (Benjamin's study). These 21 cases were followed up, and below are the primary reasons for their not operating: Burglary, technical problems, managerial weakness, financial problems, and community conflict.

Benjamin mentioned that the mini-telecentres cost very much less compared to the full telecentres, and consist of one computer, a 3-in-1 (printer, copier and scanner) and about two mobile public phones. The full telecentre consists of about five telephones, at least four computers with Internet access, a printer, a photocopier, a fax machine, a scanner, a television and a video recorder. The Universal Service Agency provides half of the set-up cost to entrepreneurs for mini-telecentres' equipment, while a range of computers and equipment is donated to the full telecentres. Most of the full telecentres are community-owned. Some full telecentres are also able to get more donations from colleges, companies and computer vendors. Benjamin (2001) concluded that less than one-third of Universal Service Agency telecentres in South Africa had the potential for sustainability.

The Universal Service Agency, act as a guide and supporting body to telecentres in the disadvantaged communities. The Agency is not obliged to provide any financial support, and as such, does not have full control over the telecentres.

2.14 MOBILE AND NETWORK DEVICES

The use of mobile devices and mobile networks to provide access to e-government services is a viable option that is proving to be a cheaper alternative. Especially, given that most of South Africa has cellular coverage.

Lack of access has been the subject of some bitterness and dispute around the table. According to De Crom & De Jager (2005) the use of technologies such as cellular phones are viewed as the most accessible way to information and communication services which is convenient as well as saves cost. Butler (2005) states that Africa became the first region where number of mobile subscribers exceeded those using fixed lines in 2001.

2.15 CONCLUSION

This chapter highlights the literature of the research carried out. Discussions on Information, E-government and Internet were also defined. The benefits and challenges of E-government were discussed. The challenge of the Internet was discussed based on economic development. Definitions of E-mail, telecentres and mobile and network devices were discussed. Research on South Africa telecentres conducted by Benjamin (2001) was also discussed. The study also explains and discusses the digital divide and the barriers for using ICTs.

Chapter 3 will discuss the research design and methodology.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 2 presented the literature review. This chapter addresses the approach to the study. It provided an explanation of the research design, details regarding the sample, instrumentation, means of data collection, and data analysis. The research design is intended to provide a framework for conducting the research.

Research methods are those approaches used to answer the questions raised by the researcher (Oates 2006:35). According to Babbie and Mouton (2003:64), research methodology involves methods and procedures used in implementing research designs. One research question can be usually be answered by using a single research method. The research method is usually employed to collect the empirical data or evidence in support of a study, as well as to draw conclusions for the research concerned (Oates 2006:36).

Research is usually undertaken to discover facts, which may be used to describe and evaluate actions. To attain these overall objectives it is essential that the facts revealed by the research should be accurate and have a precision that is measurable in statistical terms (Herbst 2001:140).

3.2 THE SETTING

This research was carried out in the Northern Cape and Limpopo Provinces of South Africa where data were collected from Heuningvlei, Galeshewe, The Oaks and Finala semi-urban community (see Figure 3.1). The Limpopo Province is South Africa's northernmost province, lying within the great curve of the Limpopo River (StatsSA 2006). Heuningvlei and Galeshewe are situated in the Sol Plaatje Municipality in Kimberley while The Oaks and Finala villages are situated in the Maruleng Municipality in Hoedspruit. Maruleng prides itself on agriculture and tourism. The Maruleng Municipality was first established in 1997 under the name Hoedspruit/Makutswi TLC. The Municipality was named after the Marula tree – Maruleng means the place of Marula.

Sol Plaatje Local Municipality (named after the famous writer) not only incorporates the city of Kimberley but also the small town of Ritchie and large tracts of rural farmland. Kimberley is the main contributor to the economy of the municipality and provides services to the rest of the region.

Sol Plaatje's economy was built on the foundation of a thriving diamond industry, and lots of deposits are still being mined today (<http://led.co.za/municipality/sol-plaatje-local-municipality>).

Below is a map of South Africa with nine provinces.



Figure 3.1

3.3 GATHERING OF DATA

3.3.1 Research design

Research design is defined by Monette, Sullivan and DeJong (2008:9) as a plan outlining how observations will be made and how the researcher will carry out the project. It helps the researcher to answer research questions and respond to the problem statement. Here, the description is what is going to be done with the participants with a view to reaching conclusions about the research.

3.3.2 Quantitative design

Quantitative design focuses on measurable aspects. It uses numbers over words to measure impact (Babbie & Mouton 2003). Burns and Grove (2003:195) define quantitative research as a formal,

objective, rigorous and systematic process for generating information about the world. A quantitative design was vital for this study as most of the data gathered had to be quantified in order to explicitly present the problems (lack of access to information) encountered by the community in the semi-urban areas so that the government could be able to prioritise these for better service delivery and community development.

3.4 SAMPLE AND SAMPLING TECHNIQUE

Polit and Beck (2008:339) define the sample as a subset of the population which is selected to represent the whole study population and must bear all the characteristics of the population. For the research to be rigorous, it is important that the researcher intimately engages with those responding to the questions asked. Sampling is the process of selecting a number of individuals from the larger population of the study. This reduces the number of people allowing for more intense engagement.

The sample for this study was drawn from the semi-urban community of Heuningvlei, Galeshewe in the Northern Cape and The Oaks and Finala in the Limpopo Province. Polit and Beck (2008:759) define convenient sampling as a sampling method where respondents are selected conveniently as and when they become available.

Sampling approaches may either be probable or non-probable. A probable sampling approach allows for random sampling where each individual has an equal chance of being selected to participate in the study. Non-probable sampling method would be where selection of the sample is based on the availability of the sample. In this study a non-probability sampling method was used to select 200 respondents from the semi-urban areas, as the researcher did not make use of a random selection of participants. Gravetter and Forzano (2003:118) argue that in non-probability sampling, the odds of selecting a particular individual are not known because the researcher does not know the population size.

A total of 200 questionnaires were distributed and reserved, which is considered by the researcher most satisfactory. This was possible because of the fact that a convenience sample was obtained by distributing questionnaires to the community found at the semi-urban area by the researcher during his visit at that particular time. Convenience sampling, a non-probability sampling method, is a sampling technique where subjects are selected based on their convenient accessibility and proximity

to the research conducting the study. This form of sampling is preferred by researchers because it is fast, easy, inexpensive and because the subjects that are being studied are readily available (Castillo 2009). Convenience sampling is “also known as grab, opportunity, accidental or haphazard sampling. With this method, the researcher uses subjects that are easy to reach. As the name describes, the researcher chooses subjects because of convenience” (Kahl 2001:1). The respondents were approached individually to complete the questionnaires at their convenience. The researcher explained to all respondents the purpose of the study and how the questionnaire is to be completed; emphasising that there should be no indication of identification of self on the questionnaire in name or in kind.

3.4.1 Advantages and disadvantages of convenience sampling

Advantages	Disadvantages
The researcher can use the most people as respondents	The sample is rarely representative
It is quick	The sample size has to be fairly large
It is cheap	

3.5 RESEARCH INSTRUMENT

The data-collecting instrument used in this study was a questionnaire. It is structured in such a way that it includes information accessibility. Wegner (2000:90) states that “from a data analysis perspective”, structured questionnaires are simple to administer and easy to tabulate and analyse statistically.

Brace (2008:35) explains that a questionnaire that is going to provide accurate, good-quality information needs to be thought about and planned before a single question is written. Brace describes a questionnaire as the medium of communication between the researcher and the subject, sometimes administered on the researcher’s behalf by an interviewer.

A decision to use questionnaires for this study was made because the nature and scope of the study pointed to this technique. Questionnaires were viewed as the logical technique to study a population

that is dispersed across the two provinces. Questions were also found to be cheaper and more cost effective.

Two types of questions were used; *open-ended questions* that gave the respondent chance to answer in their own words, and *closed-ended questions* which guided the respondent to choose answers from possible answers suggested by the researcher. The open-ended questions are very important because they do not limit respondents from answering in contrast to closed-ended questions. According to Neuman (2006:287), open-ended questions permit an unlimited number of possible answers, adequate answers to complex issues, and creativity, self-expression and richness of detail. According to Maree and Pietersen (2007:161), a closed question provides for a set of responses from which the respondent has to choose one or sometimes more than one response. Examples of closed-ended questions which respondents can choose from are those relating to:

Gender = Male or female

Residence = Urban or rural area

According to Neuman (2006:287), the advantages of open and close questions are the following:

3.5.1 Open-ended questions

- They allow respondents to answer in detail and to qualify and clarify responses and make space for unanticipated findings to be discovered.
- They also reveal the respondent's logic, thinking process and frame of reference.

3.5.2 Closed-ended questions

- The closed-ended question is advantageous when a substantial amount of information about a subject exists and the response options are relatively well known.
- They are also advantageous in that the result of the investigation can become available fairly quickly.
- Respondents understand the meaning of the questions better.
- Questions can be answered within the same framework.
- Responses can consequently be compared better with one another.

- Answers are easier to code and analyse statistically.
- Response choices can clarify answers to questions, and replication is easier.

Most disadvantages of closed-ended questions are that:

- They can suggest ideas that respondents would not otherwise have had.
- Respondents may be frustrated because their desired answer is not choice.
- Misinterpretation of a question may go unnoticed and they may force respondents to give simplistic responses to complex issues.

The closed-ended questions were used to ensure that respondents replied accurately to the dimensions of interest rather than producing large proportions or irrelevant answers (Rosnow and Rosenthal 1996:95).

The questionnaire for this study is included as Addenda A.

3.6 DATA-COLLECTION

Data-collection refers to gathering information necessary to deal with and answer the research problem. Any information that is gathered must be relevant to the research problem (Langford 2001:315). According to Polit and Beck (2008:36), data-collection is a systematic process in which a researcher collects relevant information from respondents by asking questions or opening a conversation about a phenomenon as well as reading about a phenomenon under study. Questionnaires, interview schedule and observations, records and artefacts may be used as instruments to collect this data and the activity can be:

- Self-completion of the questionnaire where respondents respond to questions asked on a questionnaire by completing these. This can be done independently or with the help of the researcher. Usually respondents are required to have a competence in reading and writing.
- Observations whereby the behaviour and/or characteristics of the sample are observed and reported on.

The table below shows the type of activity carried out in each telecentre:

Telecentre	Activities
Inato Internet Cafe Shop No 520 Mandela Road Kimberley 5520	<ol style="list-style-type: none"> 1. Interviews with the manager and operators 2. Observation 3. Interview with Community
Mabaso Shop P.O.Box 22 Heuningvlei 4456	<ol style="list-style-type: none"> 1. Interviews with the owner and a staff member. 2. Interview with users. 3. Observation
Basson Youth Leadership Development Programme Telecentre. 15 De Klerk Street The Oaks 0895	<ol style="list-style-type: none"> 1. Interviews with the manager and staff (operators). 2. Observation 3. Interview with the Community
The Oaks Village P.O. Box 487 The Oaks 0878	<ol style="list-style-type: none"> 1. Interviews with the manager and staff (operators) 2. Interviews with users 3. Observation
Gaseleka Telecentre 45 Kgotso Street Ellisras 2825	<ol style="list-style-type: none"> 1. Interviews with Community 2. Observation 3. Interviews with the manager and operators

3.6.1 The survey questionnaire

Malhotra (2004:52) defines a survey as “an interview with a large number of respondents using a predesigned questionnaire”. A survey is the most appropriate research design as it can enable the researcher to collect information from a large population. The information obtained from the sample can then be generalised to an entire population (Kerlinger & Lee 2000:2). For the purpose of this study, the researcher used the questionnaire as information is easily collected from a large population.

Goddard and Melville (2001:48) suggest that a questionnaire should have the following qualities:

- provide clear instructions;
- be short and complete;
- start with general questions;
- only ask relevant but appropriate questions; and
- ask objective questions that are precise, explicit and understandable

The table below shows the advantages and disadvantages of a questionnaire as a survey method

3.6.2 Advantages and disadvantages of questionnaires as a survey method

Advantages	Disadvantages
Questionnaires can be completed in respondents' own time	Questions must be simple and concise
Inexpensive – low cost in time and money	Low response rates
Can acquire information from a large group of people very quickly	Lack of motivation of respondents
Anonymity of respondents	Information is sought by just asking questions
Standardisation of questions	No control over order and context in which the respondents answer the questions
Lack of interviewer preconceptions	People talk more easily than they write

(Source: Gillham, 2000:5-13)

3.7 DATA-COLLECTION PROCESS

In this study the questionnaire was given out to 200 respondents. Babbie (2007:246) defines a questionnaire as “a document containing questions and or other types of items designed to solicit information appropriate for analysis”. Brace (2008:35) explains that a questionnaire that is going to provide accurate, good-quality information needs to be thought about and planned before a single question is written. Brace describes a questionnaire as the medium of communication between the researcher and the subject, sometimes administered on the researcher’s behalf by an interviewer.

The purpose of the study was explained to each and every one of the respondents. The completion of the questionnaire was also explained and respondents were told not to add their names or anything that would identify them as individuals as anonymity and confidentiality had to be maintained. The actual response and completion of the questionnaire was to be done independently by the respondents to avoid bias from the researcher and other community members.

3.8 PILOTING OF THE INSTRUMENT

Pre-testing a measuring instrument consists of carrying out all aspects of the total data-collection process on a small scale (Grinnel & Unrau 2008:336; Monette, Sullivan & DeJong 2005:9). Piloting (pre-testing) of the instrument was done by selecting five (5) people from each semi-urban area/village who were not part of the sample to respond to the questionnaire. According to Cohen, Manion and Morrison (2002:260) and LoBiondo-Wood and Harber (2002:255), pre-testing of an instrument is done to:

- Determine whether the language used was clear and understood by the respondents.
- Determine whether the questionnaire was not too long or too short.
- Determine the time taken to complete the questionnaire.
- Determine whether the questionnaire was not difficult.
- Determine commonly misunderstood questions.
- Get feedback on validity of questions.
- Check validity and reliability of the research instrument.

Following the piloting of the instrument the questionnaire was found to be too long and items were reduced from eighty-seven to fifty-six. An example of a question which was taken out of the questionnaire is **‘what kind of information do you need to access on the Internet’?** This question was found to be unnecessary as it was difficult for respondents to know about this aspect as community members often do not discuss their needs amongst each other.

Some questions were also not clear and had to be rephrased. An example of such a question is: **‘What type of information do you need to access’?** This was changed to **‘Which method do you use to access information’?**

3.9 DATA ANALYSIS

Wood and Kerr (2010:292) describe data analysis as a practice in which raw data are ordered and organised so that useful information can be extracted from it. The authors explain that the process of organising and thinking about data is essential to understanding what the data does and does not contain. According to Majanja (2004:132) analysis and the interpretation of data refers to studying data in order to determine inherent facts or meaning. Data analysis was done using quantitative analysis. Data that was collected was put on either tables or graphs. Responses on questions were calculated and converted into percentages in order to analyse the data quantitatively.

3.10 VALIDITY

Validity is described as a measure of accuracy, relevance and precision (Sarantakos, 2005:83). Babbie (2007:146) refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. In essence an instrument is valid if it measures what it intends to measure at all the times.

The validity of the data collection instruments used in the study was enhanced by the fact that questions were derived from the objectives of the study. Each question was checked to determine whether it contributed to the research objectives.

3.11 RELIABILITY

Salkind (2006:106) refers to the words *dependable, consistent, stable, trustworthy, predictable* and *faithful* as synonyms for reliability. Reliability occurs when an instrument measures the same thing more than once and results in the same outcomes. In this study the results of the piloting of the instrument were compared with those of the real study to test reliability of the study instrument. To ensure data collection reliability respondents were advised to respond to the questionnaire in a convenient place like at their homes or at the community Hall. The reason for advising the respondents to use the convenient place is that they needed a place where they would not be disturbed, in order to concentrate while responding.

The questionnaire was piloted (pre-tested) for clarity, completeness, relevance and shortcomings in a pilot study. The aim of the pilot was to establish the questionnaire's effectiveness, reliability and

validity before the actual study. The reliability of the research instrument was enhanced by having both close ended and open ended questions. The researcher ensured that he used simple, direct and unbiased wording.

3.12 ETHICAL CONSIDERATIONS

The researcher is of the opinion that conducting a research study is not only about gathering information and writing the report right away. There are ethical issues to be considered.

Ethics are norms or standards of behaviours that guide moral choices about our behaviours and our relationships with others (Cooper & Schindler 2006:116). The following ethical issues that are relevant for a study were adhered to:

- Participation in the study was voluntary. Respondents were not forced to participate in the study.
- The questionnaire did not contain the names of respondents – anonymity of respondents was maintained.
- The completion of the questionnaire was explained and respondents were not allowed to add their names or anything that would identify them as individuals as anonymity and confidentiality had to be maintained. The participants' dignity and their right to privacy were not violated, and everything that they shared with the researcher was treated with confidentiality.

3.12.1 Right to confidentiality

Respondents from the semi-urban areas under study were assured that data collected from them would not be made accessible to any person except the supervisor. This was done to protect respondents' confidentiality. The raw data collected from respondents according to Burns and Grove (2003:172) can only be disclosed with the authorisation of the subjects. The disposal time of two years was negotiated with respondents because the raw data may be required in the preparation of journal articles.

3.12.2 Anonymity

Anonymity in this study was maintained by not using names on the questionnaire. This ensured that respondents remained anonymous, as they could not be linked with responses that they gave. Anonymity also allowed the researcher to cover a wider area of study and also proved to be cost effective in terms of money and travelling.

The implication of this on the study was that the researcher was never able to do follow up with respondents who had more information, which needed follow up. This was seen as a limiting factor that will be discussed in chapter 4 of this study.

3.12.3 Permission to conduct the study

The proposal to conduct this study was presented to the Mayors of Sol Plaatje and Maruleng Municipalities. A copy of the letters from both municipalities requesting permission to conduct the research has been included as Addendum B.

3.12.4 Informed consent

Respondents were then requested to complete the consent form. It was also emphasised that giving consent meant that they agree to take part in the study knowingly, and freely. They were also at liberty to withdraw from the study without any repercussions. All respondents were asked to sign consent before they took part in the study. The consent was an indication that the purpose, aims and objectives of the study were explained to them and that they understood the implications of participation thereof. (A copy of the informed consent form is included as Addendum C).

The consent form according to Brink (2002:4) should have the following major elements:

- The objectives of the research study.
- The purpose of the research study.
- The benefits and non-benefits of the study.
- Information including research process about the research to be conducted.
- The disposal period of the raw data, bearing in mind that researchers may be required to prepare articles for publication in scientific accredited journals.

The above elements were included in the informed consent form that was given to the respondents in this study.

3.13 CONCLUSION

This chapter outlined and described the methodology used to conduct the study. It also justified the research design that was used by explaining how the sample was chosen and the method and instrumentation used for collecting data and describing the analytic techniques employed.

With respect to the reliability and validity of the research instrument, the questionnaire was piloted for clarity, completeness, relevance and shortcomings in a pilot study. The main lesson learnt from the pilot was that the questionnaire was too long, as respondents had to spend almost an hour trying to fill it. Consequently, the questionnaire was redesigned in order to make it less cumbersome for both the respondents and the researcher.

The next chapter (chapter 4) presents and analyses the data obtained from the respondents.

CHAPTER 4: FINDINGS AND RECOMMENDATIONS

4.1 INTRODUCTION

In this chapter the findings of the study are presented. The main purpose of this chapter is to analyse questions addressed by the questionnaire through the appropriate methodology as well as the interpretation of data collected from the respondents in Heuningvlei, Galeshewe, The Oaks and Finala village. The telecentre can assist in improving community education, access to information and promoting community computer literacy, if made available, in the remote areas (Heuningvlei, Galeshewe, The Oaks and Finala). This chapter is regarded as the centre of the whole research project as it presents the results of the study.

4.2 SITES VISITED

In this research, five sites were visited. Below are the descriptions of the centres visited by the researcher:

4.2.1 Heuningvlei village – Mabaso shop

Heuningvlei lacks access to basic infrastructure. Its population is 90% Setswana-speaking and entirely dependent on livestock (no ploughed field, no factories). The crime prevention focus at this site was entirely on stock theft. The area is very arid; nearly desert and the people are still using donkey carts as transport. Most of the people in this village do not have access to information and they depend on hearsay.

The village is located 20 kilometres from the town of Kimberley. There is a shop which is divided into four rooms in the village which offers telephone services, photocopying and selling groceries. It is a one-man business with three computers with no Internet connection. The low number of computers was also blamed on the security situation in Heuningvlei. The shop was also burgled, and the computers are always removed from the shop after closing hours each day and are returned the following day. The people in this village don't have access to information. In the following section, the researcher reports on the findings of the study, which are illustrated by means of figures. Figure 4.1 represents two people from Heuningvlei busy using the computers at Mabaso shop, Figure 4.2 is Inato Internet Café in Kimberley, Figure 4.3 is Basson telecentre at the farm in the Limpopo

Province, Figures 4.4 and 4.5 are RDP houses and shack houses at The Oaks village, and Figure 4.6 represents the computers inside the Gaseleka telecentre.

Figure 4.1 represents the people from Heuningvlei using the computers at Mabaso shop.



Figure 4.1: Mabaso Shop – Heuningvlei

4.2.2 Inato Internet Café

This is a narrowly-focused, profit-oriented, commercial facility offering individual access to information and communication technologies. Inato is a privately owned Internet Café with an operator who assists customers and a receptionist. It is situated at No 520 Mandela Road, in the urban area at Kimberley. The town is located 15 kilometres from Heuningvlei village in the Northern Cape Province. It is an urban facility and it is the only Internet Café in the vicinity. It offers a variety of services which include Internet service, phone calls and faxes, typing and printing of documents, projector hire, computer, TV, HI-FI repairs and computer training. The centre has three computers for Internet service. The charges for Inato Internet Café services are as follows:

Internet service:	R15 per hour
Photocopying: <i>For schools</i>	R1 per page
<i>General users</i>	R2 per page
Typing and printing: <i>Black ink</i>	R4 per page
<i>Coloured ink</i>	R5 per page

Figure 4.3 represents Basson telecentre in the farm at The Oaks.



Figure 4.3: Basson telecentre in the farm at The Oaks - Limpopo Province

4.2.4 The Oaks village

There is no telecentre and Internet Café in this village. To get to the telecentre (Basson Telecentre) the community in these areas need to travel 15 kilometres by taxis and buses.

Figure 4.4 represents RDP houses at the Oaks village in Limpopo Province.



Figure 4.4: RDP houses at The Oaks village in Limpopo Province

Figure 4.5 represents shack houses at The Oaks village in Limpopo Province.



Figure 4.5: Shack houses at The Oaks village in Limpopo Province

The community of The Oaks village are still waiting for the houses promised by the South African Government through the adoption of the reconstruction and development programme (RDP), launched by the African National Congress (ANC) in 1994. According to Statistics South Africa, eighty percent (80%) of the population in Limpopo live in rural areas (StatsSA 2002). Limpopo Province was declared by the previous President of South Africa during an address of the national council of provinces in Limpopo as one of the poorest in the country (Mbeki 2005).

4.2.5 The Gaseleka telecentre in Limpopo Province

The Gaseleka telecentre is in South Africa's poorest province, Limpopo Province. Gaseleka, which in Setswana means "the place of the chief," is a remote rural area about 80 kilometres from the nearest town, Ellisras and about 40 kilometres from the border of Botswana.

The centre offers computer training, fax, telephone, Internet and photocopying. The local schools are major users, bulk-copying question papers and reports and typing up curricula, reports and schedules on the computers. Gaseleka has proved to be financially viable. This is entirely due to the telecentre having strong management, establishing good local connections and trust – being a local monopoly. The charges for Gaseleka telecentre services are as follows:

Telephone:	80c per unit
Photocopying: <i>For schools</i>	40c per page
<i>General users</i>	50c per page
Typing and printing: <i>Black ink</i>	R3 per page
<i>Coloured ink</i>	R4 per page
Computer use:	R10 per page
Fax <i>Local call</i>	R3 per page
<i>National call</i>	R4 per page

Receiving

R2 per page

Computer course

R1, 265

Figure 4.6 represents the computers inside Gaseleka telecentre in Limpopo Province.



Figure 4.6: Computers inside Gaseleka telecentre in Limpopo Province

4.3 INTERVIEW DISCUSSION

The five centres visited and the interviews conducted were aimed at finding out how the community in the remote areas make use of the telecentres and Internet Cafés to access their rights. The people interviewed know about telecentres (e-government) and the importance of e-government as a fast way to improve government service delivery. However, they (Managers of Inato Internet Cafe, Basson Development Programme Telecentre) blame the ineffectiveness of the system on the lack of demand by the clients, delays in response to the user requests about government service and unfamiliarity of the e-government technology available to the people.

The interviews were conducted and the respondents indicated that currently there are no Internet connections in the semi-urban areas. Respondents did travel to nearby cities in order to access information regarding human rights. The respondents also stated that they need to access information regarding human rights online. Opinion varies about government policy on telecommunication; the centre's managers and operators interviewed agreed that government is trying their possible best to give the telecommunication service a good policy that will make it easily available, but the majority of the clients (centre's users) agreed that the government policies on telecommunication are

inadequate. The monopoly of the telecommunication industry by Telkom South Africa and the inability of government to provide an alternative service were described as a major obstacle to the sustainability of telecentres by the owners of the centres. The telecentre managers, operators, and their clients' interviewed believe that government is not doing enough about making the telecommunication service readily available to the people of South Africa, and until the issue is addressed, the majority of South African citizens will not have access to an adequate information technology service.

The telecentre operators, managers and their clients interviewed also stated that improved information facilities can facilitate government service in the area of education, health care, recreation and other government services.

Regarding the maintenance of community telecentres in the remote areas, it was argued that the maintenance was under constant threat from not only weak management, corruption, technical and infrastructure problems but also because of the crime situation in the rural areas such as theft of computers. However, the service provided by the telecentres has become popular and serves as meeting place for community members. Most of the respondents indicated that some of the problems which the telecentres are currently experiencing are due to a lack in the quality of business management and technical skills that are required to identify and understand community demand.

Those interviewed also stated that the service provided by the centre gives users of the centre access to information of all kinds, and such access is essential for the development of the community. However, up to now, the required level of development could not be achieved due to the failure of telecentres. The managers of the centres were asked about factors that normally lead to the failure of telecentres. They mentioned that the failure of telecentres could be attributed to a lack of funds, inadequate support from government, private organisations and corruption.

It was also stated that the greatest barriers keeping the communities of Heuningvlei, Galeshewe, The Oaks and Finala from information portals is the lack of relevant information and the fact that most of these potential customers are low-income earners. They use all their resources in fighting poverty rather than fighting for the cause by means of information technology. They are also not aware of the importance of information and communication technologies and are not willing to learn how to use them, because communication with friends and relatives by phone is enough for them. They also

considered adoption of e-government as a waste of time and resources because the contents offered by the telecentres are in English and this affects who accesses and uses the content services offered by the telecentres.

The majority of those interviewed indicated that new telecentre managers should have managerial skills such as technical skills, Human skills, Conceptual skills and qualities such as understanding the financial implications of decisions and provides clear direction to the business.

4.4 RELATIVE SUCCESS OF SOME TELECENTRES

This study also revealed that Basson Youth Leadership Development Programme telecentre is the only popular telecentre in the Farm situated at The Oaks. Activities of the telecentre include provision of access to computers, which the people use for typing documents, to send and receive e-mails, to search for information, and for computer training. This telecentre also organised workshops to enlighten the community in the remote areas about human rights issues such as child and women abuse, which is common in the rural areas, and they can use government websites in fighting for their rights. The telecentres also provide training on black empowerment programmes aimed at reducing poverty in the community. This attracts more people to the use of the telecentre.

Telecentres get some financial support from government through the Universal Service Agency, Non-governmental organisations (NGOs) and the communities to assist in areas of needs. Donation of computers and equipment from individuals and organisations also facilitates the funding of telecentres. Most of the successful telecentres are non-governmental organisation supported while majority of the mini-telecentres are more of commercial interest. The communities financially support telecentres because they are regarded as centres of education.

4.5 RESULTS AND DISCUSSION

4.5.1 INTRODUCTION

This section contains the results of the study. Findings about demographic of study participants and statistical analyses were used to answer the research questions.

The objective of this study was to find out how the community in the remote areas of South Africa access government information. The data for this research was collected by the researcher from the residents (community) of Heuningvlei, Galeshewe in the Northern Cape and The Oaks and Finala in Limpopo Province by means of an interviews and questionnaires.

Two hundred (200) questions were distributed with the help of field assistants. The assistants were to distribute the questions to people and explain to them in a local language, the importance of the research and some of technical terms used for proper response to the questions. These assistants are two Grade 12 students from the Northern Cape and Limpopo Province. The assistants were paid R100 a day for the three-day job. Out of 200 questionnaires distributed only 144 responded to the questions and returned the questionnaires to the researcher. Some of the respondents were not interested in answering the questions, indicated (saying) that they have answered many of such questions in the past without thus bringing any development to their village (community).

4.5.2 Descriptive statistics of community and demographic information (Results and discussion)

Descriptive statistics refer to statistics that are calculated from the characteristics of the population, sample or other group and serve to describe the group (Olivier 2009:87). In the following section of this chapter, the researcher reports on the findings of the study, which are illustrated by means of tables, figures and graphs. The respondents' (community members') demographic information is presented in Table 4.1 to Table 4.28 and also in Figure 4.1 to 4.6.

This is a cross-sectional design where the researcher collected data by sending questionnaires to the respondents. This time, in this chapter, is what the researcher has seen in the four villages.

The Pearson Chi-Square test was performed in order to establish whether a significant relationship was present between two variables. Where a value was smaller than 0.05, a meaningful relationship could be inferred.

Table 4.1: Gender of the respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Gender	Male	12 66,7%	18 60,0%	34 63,0%	28 66,7%	92 63,9%
	Female	6 33,3%	12 40,0%	20 37,0%	14 33,3%	52 36,1%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

At four villages (Finala, Galeshewe, Heuningvlei and The Oaks), there were more male respondents than females (see Table 4.1). There were males with a total percentage rate of 63.9% and 36.1% for females. The fact that there were fewer female respondents could be ascribed to the fact that women assume that they carry more family responsibility than men. Another reason or contributing factor for fewer female respondents could be attitudes toward technology and the ways that males and females are brought up. If this assumption is true, there is a need to encourage women in the rural areas such as Finala, Galeshewe, Heuningvlei and The Oaks to make use of telecentres in order to reduce high levels of illiteracy. Parsons (1982:310) found that parents expect their sons and daughters to study different subjects at school. Fathers often emphasise social sciences and humanities for their daughters and natural science for their sons.

Table 4.2: Chi-Square Test: Gender of the respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.417 ^a	3	.937
Likelihood Ratio	.417	3	.937
N of Valid Cases	144		

a. 0 cells (0.0%) have an expected count less than 5. The minimum expected count is 6.50.

In Table 4.2, results were analysed to establish the relationship between gender and village and an X²-test was performed, which yielded a p-value of .937 which is not less than 0.5, thus there was no

statistically significant relationship between gender and four villages. Since the observed significance (.937) is more than 0.05, the null hypothesis that there are no significant differences between the gender groups of the four villages cannot be rejected at 5% level of significance.

Table 4.3: Community Information needs by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Community Information needs	Service delivery	7	14	11	14	46
		53,8%	51,9%	40,7%	53,8%	49,5%
	Community development	0	6	4	1	11
		0,0%	22,2%	14,8%	3,8%	11,8%
	Search jobs	6	7	4	7	24
	46,2%	25,9%	14,8%	26,9%	25,8%	
	Municipality budget	0	0	8	4	12
		0,0%	0,0%	29,6%	15,4%	12,9%
Total		13	27	27	26	93
		100,0%	100,0%	100,0%	100,0%	100,0%

The results in Table 4.3 show that most of the respondents (49.5%) from the four villages need information for service delivery. Eleven respondents (11.8%) needs information for community development, twenty-four respondents (25.8%) needs information for searching jobs while 12.9% needs information for municipality budget. The conclusion can thus be drawn that the 49.5% service delivery is an issue. Ababio (2004:284) found that all municipalities should provide accurate information about the services they provide and who are entitled to them. There were no big differences between the villages regarding service delivery by the respondents.

Table 4.4: Chi-Square Test: Community information needs by respondents * Village
Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.708 ^a	9	.014
Likelihood Ratio	25.644	9	.002
N of Valid Cases	93		

a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is 1.54.

As the sample Asymp. Sig (2-sided) is .014, less than the 0.05 the level of significance, the four villages significantly differed regarding information needs by the community. The difference between the villages can be summarized as follows:

- i. More than 50% respondents in Finala, Galeshewe and The Oaks need information with only 40.7% at Heuningvlei.
- ii. There was no one who needs municipal budget information at Finala and Galeshewe than the two other villages (Heuningvlei and The Oaks).
- iii. Fewer people need information regarding budget at Finala than any of the other villages.

Table 4.5: Dangers of not having the information by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Dangers not having information	No Community participation	6 33,3%	7 23,3%	8 14,8%	11 26,2%	32 22,2%
	Poor performance	0 0,0%	2 6,7%	4 7,4%	3 7,1%	9 6,3%
	Service delivery protests	4 22,2%	4 13,3%	6 11,1%	7 16,7%	21 14,6%
	No community development	8 44,4%	17 56,7%	36 66,7%	21 50,0%	82 56,9%
	Total	18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

Based on Table 4.5 with regard to dangers of not having the information, the following can be drafted: The total percentage rate of 22.2% respondents from the four villages indicate that absent of community participation are the dangers of not having information, nine participants (6.3%) indicated that poor performance is the dangers of not having the information, twenty-one (14.6%) indicated that service delivery protests are the dangers of not having the information while the majority of 56.9% non-availability of community development are the dangers of not having the information.

Table 4.6: Chi-Square Test: Dangers of not having the information by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.020 ^a	9	.635
Likelihood Ratio	8.109	9	.523
N of Valid Cases	144		

a. 7 cells (43.8%) have an expected count less than 5. The minimum expected count is 1.13.

The Pearson Chi-Square value is .635 which is greater than 0.05 therefore there is no statistically significant relationship between the dangers of not having the information and villages.

Table 4.7: Problems associated with accessing the information by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Problems associate with accessing information	Cost	4 22,2%	7 23,3%	16 29,6%	7 16,7%	34 23,6%
	Lack of acces facilities	8 44,4%	8 26,7%	15 27,8%	4 9,5%	35 24,3%
	Non-availability of online systems	5 27,8%	7 23,3%	9 16,7%	16 38,1%	37 25,7%
	Lack of awareness	0 0,0%	4 13,3%	6 11,1%	6 14,3%	16 11,1%
	Physical access	1 5,6%	4 13,3%	8 14,8%	9 21,4%	22 15,3%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

In Table 4.7 the respondents were required to indicate the problems associated with accessing the information and the results from the four villages show that a total percentage rate of 23.6% cost is the problem associated with access to information, thirty-five respondents (24.3%) lack of access facilities are the problems associated with accessing the information, thirty-seven (25.7%) non-availability of online systems are the problems associated with accessing the information, sixteen (11.1%) lack of awareness are the problems associated with accessing the information while 15.3% physical access are the problems associated with accessing the information.

Table 4.8: Chi-Square Test: Problems associated with accessing the information by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.890 ^a	12	.119
Likelihood Ratio	20.590	12	.057
N of Valid Cases	144		

a. 8 cells (40.0%) have expected count less than 5. The minimum expected count is 2.00.

Table 4.8 indicates that, as the Asymp. Sig. (2-sided) is .119, and there is no statistically significant relationship between the villages regarding the problems associated with accessing the information.

Table 4.9: How is the current study seeking to address some (or all) of these issues by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
How current study seeking to address these issues	Provision of Internet Cafe	2 11,1%	7 23,3%	8 14,8%	5 11,9%	22 15,3%
	Provide training & capacity building	2 11,1%	6 20,0%	10 18,5%	4 9,5%	22 15,3%
	Provision of e-government	8 44,4%	6 20,0%	8 14,8%	7 16,7%	29 20,1%
	Provision of ICT	4 22,2%	5 16,7%	8 14,8%	7 16,7%	24 16,7%
	Provision of telecentre	2 11,1%	6 20,0%	20 37,0%	19 45,2%	47 32,6%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

Table 4.9 shows that the total percentage rate of 15.3% respondents from the four villages indicated that the provision of Internet Café will address some of these issues, twenty-two (15.3%) provision of training and capacity building will address some of these issues, twenty-nine (20.1%) provision of e-government will address some of these issues, twenty-four (16.7%) provision of ICT will address some of these issues while 32.6% indicated that the provision of telecentre will address some of these issues. The results indicate that more respondents are from Heuningvlei village with a total of (54).

Table 4.10: Chi-Square Test: How is the current study seeking to address some (or all) of these issues by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.846 ^a	12	.155
Likelihood Ratio	16.404	12	.173
N of Valid Cases	144		

a. 6 cells (30.0%) have an expected count less than 5. The minimum expected count is 2.75.

The Pearson-Chi-Square value is greater than 0.05 therefore there is no statistically significant relationship between the villages regarding how the current study seeking to address some of these issues.

Table 4.11: How will the results of the study be communicated/presented to help address these issues respondents * Village

		Village				
		Finala	Galeshewe	Heuningvlei	The Oaks	Total
How results of study be communicated to help address these issues.	Radio	7 38,9%	12 40,0%	22 40,7%	15 35,7%	56 38,9%
	Community meeting	11 61,1%	18 60,0%	32 59,3%	27 64,3%	88 61,1%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

The results in Table 4.11 indicate that the majority of respondents (61.1%) indicates that the results of the study will be communicated through the community meeting in their village while the total percentage rate of 38.9% indicate that the results of the study will be communicated through the Radio in their village.

Table 4.12: Chi-Square Test: How will the results of the study be communicated/presented to help address these issues by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.272 ^a	3	.965
Likelihood Ratio	.273	3	.965
N of Valid Cases	144		

a. 0 cells (0.0%) have an expected count less than 5. The minimum expected count is 7.00.

The Pearson Chi-Square value is .965 which is greater than 0.05 therefore there is no statistically significant relationship regarding how the results of the study be communicated to address these issues and villages.

Table 4.13: Method used to access information by the respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Method used to access information	Newspaper	5 27,8%	5 16,7%	9 16,7%	3 7,1%	22 15,3%
	Radio	4 22,2%	6 20,0%	13 24,1%	14 33,3%	37 25,7%
	Television	6 33,3%	14 46,7%	25 46,3%	19 45,2%	64 44,4%
	Community meeting	3 16,7%	5 16,7%	7 13,0%	6 14,3%	21 14,6%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

In Table 4.13, the results show that 15.3% of the respondents from the four villages have access to information is through Newspaper, thirty-seven persons (25.7%) have access to information by radio, sixty-four (44.4%) respondents have access to information through television while 14.6% access to information is through community meetings. The researcher classified television as technology.

The conclusion can thus be drawn from the results that there are few people who access information through community meetings and by reading newspapers. Most of the newspapers are only available in English and Afrikaans. The implementation of telecentres in the four villages would assist in providing online access to information to the community. It is further concluded that people in the remote areas such as Heuningvlei, Galeshewe, The Oaks and Finala receive or have access to information through newspapers, television, radio and newspapers. In the contemporary business world where appropriate technology and the use of such ICT systems should be the norm, thus the above is a matter for concern.

Table 4.14: Chi-Square Test: Method used to access information by the respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.062 ^a	9	.734
Likelihood Ratio	6.147	9	.725
N of Valid Cases	144		

a. 5 cells (31.3%) have expected count less than 5. The minimum expected count is 2.63.

The value of Pearson Chi-Square is .734. This value is more than 0.05. Therefore, there is no statistically significant relationship between the villages regarding the method used to access information.

Table 4.15: Ages of the respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Age	11-27 years	6 33,3%	14 46,7%	28 51,9%	20 47,6%	68 47,2%
	28-44 years	8 44,4%	10 33,3%	17 31,5%	7 16,7%	42 29,2%
	45-61 years	4 22,2%	4 13,3%	7 13,0%	11 26,2%	26 18,1%
	62 years and above	0 0,0%	2 6,7%	2 3,7%	4 9,5%	8 5,6%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

Table 4.15 shows that 47.2% of the respondents from the four villages are between the age group of 11-27. Total percentage rate of 29.2% were between the ages of 28-44, total percentage rate of 18.1% were between the ages of 45-61 while 5.6% were between the ages of 62 years and above. The reason for fewer respondents could be age. The elders assume that technology is for the younger generations because it is confusing and difficult to learn.

Table 4.16: Chi-Square Test: Ages of the respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.401 ^a	9	.319
Likelihood Ratio	11.432	9	.247
N of Valid Cases	144		

a. 5 cells (31.3%) have an expected count less than 5. The minimum expected count is 1.00.

In Table 4.16, results were analysed to establish the relationship between age and village and X²-test was performed, yield a p-value of .319 which is not less than 0.5, there was no statistically significant relationship between age and village.

Table 4.17: Qualifications of the respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Qualification	High School	4	7	23	16	50
		22,2%	23,3%	42,6%	38,1%	34,7%
	Diploma	1	1	7	3	12
		5,6%	3,3%	13,0%	7,1%	8,3%
	Degree	0	0	6	0	6
		0,0%	0,0%	11,1%	0,0%	4,2%
	Primary School	13	22	18	23	76
		72,2%	73,3%	33,3%	54,8%	52,8%
Total		18	30	54	42	144
		100,0%	100,0%	100,0%	100,0%	100,0%

Table 4.17 shows the education level among the respondents. The total percentage level of high school education from the four villages is 34.7%. The total percentage of respondents with a diploma is 8.3%, followed by 4.2% having degrees and 52.8% having primary school. The findings indicate that a low level of education among community members is one of the contributing factors responsible for limited access to information in rural communities. The researcher is of the opinion that education is considered as the key factor in determining access to information and according to the findings of this study; university graduates in Heuningvlei and Galeshewe are poor because there is as yet no University in the Northern Cape Province. A conclusion that can be drawn from these findings is that most or the majority of the respondents from the four villages had primary school education because their parents cannot afford to pay university costs.

Table 4.18: Chi-Square Test: Qualifications of the respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.150 ^a	9	.006
Likelihood Ratio	25.399	9	.003
N of Valid Cases	144		

a. 8 cells (50.0%) have an expected count less than 5. The minimum expected count is .75.

In Table 4.18, results were analysed to establish the relationship between qualification and village. As the Asymp Sig (2-sided) sample value is .006 for the Pearson Chi-square, there is a statistically significant relationship between the four villages regarding the educational status of the respondents. Education level varied with most of the participants having primary school education. The main difference between the villages is that more than 70% respondents in Finala and Galeshewe has primary school education while more educated people (11.1%) with degrees were at Heuningvlei. In the other three villages there is no one with a degree as qualification. One of the contributing factors for the shortage of respondents with degree at the other villages is because there is no University in Northern Cape Province.

Table 4.19: Occupation of the respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Occupation	Government sector	0 0,0%	1 3,3%	10 18,5%	7 16,7%	18 12,5%
	Private sector	2 11,1%	5 16,7%	11 20,4%	9 21,4%	27 18,8%
	Own business	3 16,7%	5 16,7%	9 16,7%	7 16,7%	24 16,7%
	Student	0 0,0%	0 0,0%	5 9,3%	0 0,0%	5 3,5%
	Not working	7 38,9%	10 33,3%	15 27,8%	13 31,0%	45 31,3%
	Farm worker	6 33,3%	9 30,0%	4 7,4%	6 14,3%	25 17,4%
	Total	18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

From Table 4.19 it can be seen that the total percentage rate of 12.5% of the respondents from the four villages are government workers, twenty-seven (18.8%) works with private organisation, twenty four (16.7%) have own businesses, five (3.5%) are students, forty-five (31.3%) are not working while 17.4% are farm workers. This is an evidence of the rate of unemployment in South Africa particularly the semi-urban areas. This evidence directly contradicts statement made by the President of South Africa Jacob Zuma in his state of the Nation Address at the opening of Parliament on 3 February 2008 where he promised the citizens of South Africa that the Government will create 500 000 jobs.

Table 4.20: Chi-Square Test: Occupation of the respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.917 ^a	15	.051
Likelihood Ratio	29.099	15	.016
N of Valid Cases	144		
a. 9 cells (37.5%) have expected count less than 5. The minimum expected count is .63.			

As the sample Asymp. Sig (2-sided) is .051, which is not more than 0.05, there is a borderline significant relationship. Finala and Galeshewe have more farm workers while Heuningvlei and The Oaks have more Government and private sectors workers.

Table 4.21: Monthly salary received by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Salary	R1-R199	5 38,5%	8 40,0%	6 14,6%	11 30,6%	30 27,3%
	R200-R399	3 23,1%	4 20,0%	9 22,0%	3 8,3%	19 17,3%
	R400-R799	0 0,0%	8 40,0%	11 26,8%	7 19,4%	26 23,6%
	R800-R999	2 15,4%	0 0,0%	2 4,9%	8 22,2%	12 10,9%
	R1000-R1199	3 23,1%	0 0,0%	6 14,6%	2 5,6%	11 10,0%
	R1200 and above	0 0,0%	0 0,0%	7 17,1%	5 13,9%	12 10,9%
	Total	13 100,0%	20 100,0%	41 100,0%	36 100,0%	110 100,0%

From Table 4.21 it can be seen that the total percentage rate of 27.3% of the respondents from the four villages earned lower salaries of between R1-R199 bracket, nineteen (17.3%) earned salaries in the R200-R399 bracket, twenty-six (23.6%) earned salaries in the R400-R799 bracket, twelve (10.9%) earned salaries in the R800-R999 bracket, eleven (10.0%) earned salaries from R1000-R1199, twelve (10.9%) earned salaries from R1200 and above. In addition, the findings also indicate that lower incomes among the community are contributing factors responsible for the limited access to information in the rural areas. Those participants with low monthly salaries had low educational qualifications which are understandable because they are not educated and they don't have skills. There are more people in Heuningvlei (41) who are receiving pay every month than the other villages. The village which is having problems with employment is Finala.

Table 4.22: Chi-Square Test: Monthly salary received by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.783 ^a	15	.007
Likelihood Ratio	41.381	15	.000
N of Valid Cases	110		

a. 17 cells (70.8%) have an expected count less than 5. The minimum expected count is 1.30.

The Pearson Chi-Square test of the monthly salary showed that there is a statistically significant relationship between monthly salaries from the four villages, the reason being that some of the participants are farm workers and their salaries differ from government employees.

The difference between the respondents monthly salary in the villages is summarised as follows:

- i. There were more people in Galeshewe, Heuningvlei and The Oaks earning more salary than people at Finala.
- ii. Fewer people (11) were in the salary category of R1000-R1199. There were three people at Finala, six people at Heuningvlei and only two people at The Oaks. There was no one in this category at Galeshewe.
- iii. At Finala and Galeshewe, there was no one earning above R1200.

The researcher is of the opinion that this is an indication that the farming sector does not pay well as we have seen more labour disputes in the farming industry, such as demands made by striking farmworkers in the Western Cape's vineyards.

Table 4.23: Distance travelled by respondents to reach the telecentre * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Distance to telecentres	Less than 1 kilometre	2 11,1%	10 33,3%	19 35,2%	10 23,8%	41 28,5%
	1 to 2 kilometres	8 44,4%	6 20,0%	21 38,9%	14 33,3%	49 34,0%
	3 to 4 kilometres	4 22,2%	3 10,0%	4 7,4%	3 7,1%	14 9,7%
	5 to 6 kilometres	2 11,1%	3 10,0%	4 7,4%	8 19,0%	17 11,8%
	More than 7 kilometres	2 11,1%	8 26,7%	6 11,1%	7 16,7%	23 16,0%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

Table 4.23 shows that the total percentage rate of 28.5% respondents from the four villages travelled less than a kilometre, forty-nine (34.%) travelled one to two kilometres, fourteen (9.7%) travelled three to four kilometres, seventeen (11.8%) travelled five to six kilometres and while 16% more than 7 kilometres to reach telecentres.

Table 4.24: Chi-Square Test: Distance travelled by respondents to reach the telecentre * Village

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.567 ^a	12	.212
Likelihood Ratio	15.217	12	.230
N of Valid Cases	144		

a. 8 cells (40.0%) have an expected count less than 5. The minimum expected count is 1.75.

The value of Pearson Chi-Square is .212. This value is more than 0.05. Therefore, there is no statistically significant relationship between the villages regarding the distance to the telecentres.

Table 4.25: Method of transport used to get to the telecentre by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Transport method used to get to the telecentre	I walk	4 22,2%	8 26,7%	10 18,5%	4 9,5%	26 18,1%
	By bicycle	8 44,4%	12 40,0%	10 18,5%	10 23,8%	40 27,8%
	By taxi	3 16,7%	6 20,0%	16 29,6%	8 19,0%	33 22,9%
	By bus	2 11,1%	4 13,3%	14 25,9%	12 28,6%	32 22,2%
	By my own car	1 5,6%	0 0,0%	4 7,4%	8 19,0%	13 9,0%
Total		18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

From Table 4.25 it can be seen that the total percentage rate of 18.1% of the respondents from the four villages walked to get to telecentre, forty (27.8%) used bicycles to get to the telecentre, thirty-three (22.9%) used the taxi to get to the telecentre, thirty-two (22.2%) used the bus to reach the telecentre while 9% travelled by car. A conclusion that can be drawn from these findings is that the total percentages of respondents who travelled by bicycle and by bus are nearly the same. The respondents opted to travel by bicycle because it is free compared to taxi and bus.

Table 4.26: Chi-Square Test: Method of transport used to get to the telecentre by respondents * Village

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.116 ^a	12	.049
Likelihood Ratio	22.968	12	.028
N of Valid Cases	144		

a. 7 cells (35.0%) have an expected count less than 5. The minimum expected count is 1.63.

Table 4.26 indicates that there is a significant relationship between the four villages in terms of transport used to get to the telecentre by respondents (Asymp. Sig. 2 sided – is .049, which is less than 0.05, the level of significance). The differences are explained as follows:

- i. More respondents at Finala (44.4%) and Galeshewe 40% travelled by bicycle to get to the telecentre, compared to 18.5% and 23.8% of Heuningvlei and The Oaks.
- ii. In Galeshewe there were no respondents (0.00%) and in Finala one who travelled by car to reach the telecentre, compared to 7.4% in Heuningvlei and 19% in The Oaks.

Table 4.27: Transport cost to getting to the telecentres by respondents * Village

		Village				Total
		Finala	Galeshewe	Heuningvlei	The Oaks	
Cost to the telecentres	Nothing	3 16,7%	5 16,7%	18 33,3%	5 11,9%	31 21,5%
	Less than R5-00	4 22,2%	5 16,7%	12 22,2%	11 26,2%	32 22,2%
	R5-00 to R6-00	4 22,2%	4 13,3%	9 16,7%	5 11,9%	22 15,3%
	R6-01 to R7-00	2 11,1%	6 20,0%	7 13,0%	3 7,1%	18 12,5%
	R7-01 to R8-00	3 16,7%	5 16,7%	8 14,8%	4 9,5%	20 13,9%
	More than R9-00	2 11,1%	5 16,7%	0 0,0%	14 33,3%	21 14,6%
	Total	18 100,0%	30 100,0%	54 100,0%	42 100,0%	144 100,0%

Table 4.27 shows that the total percentage rate of 21.5% respondents from the four villages paid nothing to travel to the telecentre. Thirty two (22.2%) paid less than R5-00 to travel to the telecentre, twenty two (15.3%) paid between R5-00 and R6-00 to reach the telecentre, eighteen (12.5%) paid between R6-01 and R7-00 to travel to the telecentre, twenty (13.9%) paid between R7-01 and R8-00 to reach to the telecentre while 14.6% of respondents paid more than R9-00 to reach the telecentre which most of the community in the four villages cannot afford. A conclusion that can be drawn from these findings is that the total percentage of 21.5% respondents paid nothing to reach the telecentres because they have travelled by bicycle.

Table 4.28: Chi-Square Test: Transport cost to getting to the telecentres by * Village
Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.033 ^a	15	.016
Likelihood Ratio	34.085	15	.003
N of Valid Cases	144		
a. 10 cells (41.7%) have an expected count less than 5. The minimum expected count is 2.25.			

The results in Table 4.28 show that the value of the Chi-Square test performed is .016 which is less than 0.05; therefore there is a statistically significant relationship between cost spent by respondents and villages. The difference between the villages in terms of the cost of getting to the telecentre is summarized below:

- i. More respondents in Heuningvlei (33.3) paid nothing to reach the telecentre. The reason could be that some of the respondents might have used their bicycles or walked to get to the telecentre (see Table 4.25 discussion).
- ii. More respondents at The Oaks used more than R9.00 to reach the telecentre. These costs were high for the community of The Oaks village.

4.6 FINDINGS

The study's principal findings are:

- There were more male respondents than females in the four villages as revealed by the findings in Table 4.1. This means that males want to participate in the community development than females. The fact that there were fewer female respondents could be ascribed to the fact that women assume that they carry more family responsibility than men. Another reason or contributing factor for fewer female respondents could be attitudes toward technology and the ways that males and females are brought up.
- Most of the respondents at the four villages are teenagers (aged between 11 to 27 years). Age is also one of the contributing factors for the community in the four villages in terms of (regarding) technology (see Table 4.15).
- The education levels of most of the community in the four villages do not seem to be a priority as most leave school early and commit crime for survival (see Table 4.17).
- Most of the telecentres are located more than 7 kilometres from the village. Ideally, telecentres should be located near the community, within a short walking distance.
- Due to lack of connectivity, the communities in the four villages still travel long distances to reach the telecentre in order to access information (see Table 4.23).
- The telecentre managers, operators and their clients interviewed believe that government is only making the ICT service available to the people at the urban areas.
- More than 30% of the respondents in the four villages are not working. Access, affordability and transport costs play an important role in explaining why most of the communities of Finala, Galeshewe, Heuningvlei and The Oaks are not educated (see Table 4.19).
- The findings show that there is limited access to information at the four villages. It was also found that access to information is through radio and television which is regarded as technology (see Table 4.13). This is also an indication that these respondents are not moving with technology. In addition, the findings also indicate that level of literacy and language barriers amongst community members are contributing factors responsible for the limited access to information in the villages.

- As the use of information and telecommunication infrastructure is quickly becoming the norm throughout the world and in South Africa, it is believed that people without it are relatively deprived and therefore information and communication poor. Finala, Galeshewe, Heuningvlei and Oaks therefore find themselves on the wrong side of the information gap. The reason for this can be ascribed to a lack of access to ICTs and the income gap serves as an additional measure to further deny access.
- The communities of Finala, Galeshewe, Heuningvlei and The Oaks need to change from the 'old' ways of doing things to 'new' ways of doing things. The main purpose of changing from the 'old' to the 'new' is not only for the benefit of the community or the environment, but also for the country at large. This will ensure that the communities stay on track with the changes brought about by technology and thereby ensure they remain up to date with information in their environment.
- It is the opinion of the researcher that telecentres are the primary instruments for bridging the digital divide and bringing the information highway to villages such as Heuningvlei, Galeshewe, The Oaks and Finala.

4.7 RECOMMENDATIONS OF THE STUDY

The study focused on the problems of the effective Government accessibility system experienced by the community of Heuningvlei, Galeshewe, The oaks and Finala.

The study went further by investigating the lack of access to information and challenges facing the community. At the end possible mechanisms are suggested for addressing the lack of access to information problems and challenges facing the community.

Based on the issues raised, the following recommendations are made:

- Provision of telecentres and information centres in villages in the Northern Cape and Limpopo Province for easy access to information is highly recommended. Attempts at making these centres more affordable should be pursued by providing communal access to ICT facilities within easy reach of community members. This will overcome the gap that exists between the urban and semi-urban communities regarding access to human rights information.

- Communities should be involved at implementation and decision making levels and in the implementation of projects in the village.
- Mobile data is getting cheaper and might be a better solution to access the information on hand-held devices.
- It is postulated that the implementation of telecentres and Internet Cafés, in the villages such as Finala, Galeshewe, Heuningvlei and The Oaks, will contribute to better access to human rights.
- Another important recommendation is that training in computer literacy should be provided to all people residing in remote areas. They should also be motivated to visit the nearby telecentre and use technology. In particular, training initiatives should address the attitude towards technology by the community members, because findings from the study reveals that most of the communities in the four villages need to change their mindset (attitude) because they still believe that computers are made for rich people and also for those residing in urban areas.
- Telecentres should be located near the community in order to save travelling costs (see Table 4.23).
- The study also recommended that the service costs charged by the telecentre and Internet Cafés should not be high. This will assist the community to afford to pay Internet services (refer to Section 4.2.5).
- It is also recommended that people in the four villages must do computer courses in the telecentres. This will enhance community education and promote community computer literacy and take away the fear associated with utilising technology.
- Information is important for decision-making. For this reason, it is recommended that continued campaigns on awareness about the importance of access to information through telecentres and Internet Cafés should be conducted.
- It is further recommended that government should implement e-government to encourage the people in the villages in order to be able to access information online.
- It is recommended that one way of bridging the digital divide would be to establish community technology centres. These centres can provide better access and learning for an entire community which would begin to bridge the digital divides.

- It is further recommended that access to ICT should no longer be viewed as a privilege where Internet is provided to people in urban areas. The government should ensure that all citizens of South Africa have access to at least the telephone, a computer and the Internet.

4.7.1 Further research

Further research in this field is recommended that will enhance and supplement the study on the impact of lack of access to information by the community of Heuningvlei, Galeshewe, The oaks and Finala village. The following research that is not covered in this study is recommended for further study:

- Improving living conditions through better access to information, social services for the community.
- Unlocking the existing resource necessary for the development of the community in order to improve the quality of life, especially the most and marginalised sections of the community.
- Comparison of the remote areas (villages) in other provinces should be conducted to see whether they experience similar problems.
- Further research is needed in other provinces to find out whether they experience similar problem experienced by the research area (Finala, Galeshewe, Heuningvlei and The Oaks). This will then identify areas of improvement in the system.

4.8 LIMITATIONS OF THE STUDY

- The study was conducted in only two remote areas in Northern Cape and Limpopo Province, which have the effect that the findings cannot be fully generalised to the nine provinces or elsewhere. The results will only be relevant to the four villages studied. Other research questions and concerns regarding remote (semi-urban) areas could be addressed in future studies.
- The anonymity ethical requirements made it impossible for the researcher to follow up on those respondents who had more information about the problems encountered.

4.9 CONCLUSION

Chapter 4 highlights the data analysis used and the results arrived at together with illustrative tables and graphs. Lastly, recommendations, limitations and suggestions for future research were made.

CHAPTER 5: CONCLUSIONS OF THE STUDY

5.1 INTRODUCTION

This Chapter forms the conclusion of the study. In Chapter 1 an introduction to the study outlined the nature of the problem, especially the community in the remote areas in Limpopo and the Northern Cape Province. Chapter 2 presented the literature review. This was followed by a brief discussion of the research methodology which is discussed in detail in Chapter 3 to form a framework for the study. The findings, recommendations and limitations of the study were discussed comprehensively in Chapter 4. This final Chapter will provide concluding remarks on the main findings of the study.

5.2 AN OVERVIEW OF THE STUDY

The problem statement of this study was provided in Chapter 1 (refer to Section 1.4) namely:

The problem for this study is **an investigation into the lack of effective government information accessibility system for a community in the remote areas of South Africa**. In an attempt to address the primary research question of this study, **“How does the government information accessibility system impact the community in the remote areas of the Northern Cape and Limpopo Provinces to access human rights?”**, secondary questions were posed and the results are summarised hereafter (refer to Section 1.6 of Chapter 1).

5.2.1 Q: What are the information needs of the community?

This secondary question has been clarified in detail in Chapter 4. The majority of respondents from the four villages revealed that the community needs information regarding service delivery (refer to Table 4.3).

5.2.2 Q: What are the dangers/shortcomings of not having the information?

This secondary question has been addressed in Chapter 4. A total percentage of 56.9% of the respondents from the four villages agree that the un-availability of community development are the dangers of not having the information (refer to Table 4.5).

5.2.3 Q: What are the problems associated with providing/accessing the information?

This secondary question has been clarified in Chapter 4. The majority of respondents from the four villages revealed that cost is the problem associated with access to information (refer to Table 4.7).

5.2.4 Q: How is the current study seeking to address some (or all) of these issues?

This secondary question has been addressed in Chapter 4. A total percentage of 32.6% agree that the provision of telecentres will address some of these issues (refer to Table 4.9).

5.2.5 Q: How will the results of the study be communicated/presented to help address these issues?

This secondary question has been addressed in Chapter 4. The majority of the respondents from the four villages indicated that the results of the study will be communicated through the community meeting (refer to Table 4.11).

It is evident from the findings that the community in the rural areas have no facilities such as telecentre with connections online and Internet Café. The community is using Newspaper, TV, Radio and community meetings to access information (refer to Table 4.13).

5.3 CONCLUSION

The integrated results have revealed that the answer to the primary research question is that the respondents from the four villages agreed that the provision of telecentres with online facilities and Internet Café in the rural areas will address these issues of the current study. Given this situation, it implies that the lifestyle of those communities is forced to differ from that of others, owing to the lack of access to information. This has been supported by the results revealed by the researcher during his visits at the four villages (refer Section 4.2.1 and 4.2.4).

BIBLIOGRAPHY

ABABIO, E.P. 2004. Enhancing community participation in developmental local government for improved service delivery. *Journal of public administration* 39(2):272-289.

ABDUL RAZAK, N. 2005. An analysis of Malaysian e-community centre in Bridging the Digital Divide: A paper presented at the e-Malaysia Seminar, on December 6-7.

ABRAMSON, A.M. & MEANS, E.G. 2001. *E-Government*, Pricewaterhouse Coopers Endowment for the Business of Government, Bowman & Littlefield Publishers Inc.

ACHTERBERG, M. 2001. How culture affects information sharing in an organisation. http://www.kwork.org/white_papers/cultural.htm#sharing
Retrieved on 27 August 2011.

ANDERSON, W.W. 2002. *Social Work Research notes*. North-West University, Mafikeng Campus.

ANDERSON, A.M., DODD, A. & ROOS, M.C. 2006. *Everyone's Guide to South African Law*. Published by Zebra Press.

ARMA International. 2000. *Glossary of records management terms*. 2nd ed. Prairie Village, KS:ARMA International.

BABBIE, E. & MOUTON, J. 2003. *The practice of social research*. Cape Town: Oxford University Press.

BABBIE, E. 2007. *The practice of social research*. 11th ed. Belmont: Thomson Wadsworth.

BAILUR, S. 2007. Using Stakeholder Theory to Analyze Telecenter Projects. *The Massachusetts Institute of Technology Information Technologies and International Development* 3(3):61-80.

BALOYI, M.R. 2008. The impact of public servants on service delivery. *Service Delivery Review* 6(3):9-11.

BARKER, R.L. 2003. *The social work dictionary*. 5th ed. Washington, DC: NASW Press.

BENJAMIN, P. 2001. *Literature Review on the Impact of Public Access to Information and Communication Technologies*.

<http://www.library.globalimpactstudy.org/sites/default/files/docs/CIS-WorkingPaperNo6.pdf>

Retrieved on 28 May 2012.

BENJAMIN, P. 2001. Telecentres in South Africa. *The Journal of Development Communication Telecenters & ICT for Development-Critical Perspectives & Visions for the Future* 12(2).

BENJAMIN, P. 2001a. USA Telecentre Survey. Community; Unity through Communication. *South African Community Newsletter*. Johannesburg: Graduate School of Public and development Management, University of the Witwatersrand.

BENJAMIN, P. 2002. Telecentre 2002 Report 2: International case studies.

<http://www.communitysa.org.za>

Retrieved on 10 June 2011.

BENJAMIN, P. 2003. *The Universal Service Agency's Telecentre Programme: 1998-2000*. Pretoria: Human Sciences Research Council.

BLACK, R. & ATKINSON, J. 2005. *Addressing the Digital divide in Rural Australia*.

<http://www.ausweb.scu.edu.au/aw07/papers/refereed/black/paper.html>.

Retrieved 14 November 2013.

BONHAM, G., SEIFERT, J. & THORSON, S. 2001. The transformational Potential of e-government; The Role of Political Leadership. *The 4th Pan European International Relations Conference of the European Consortium for Political Research, the University of Kent, Canterbury, U.K.*

BOTHA, Z. 2002. Using technology to improve service delivery.

<http://www.engineeringnews.co.za/print-version/egov-using-technology-to-improve-service-delivery-2002-11-01>

Retrieved on 10 March 2011.

BOTHMA, M.M. 2007. *Combating the corporate paper war: optimizing electronic filing and electronic mail*. M. Tech Dissertation. Vaal University of Technology. Unpublished.

BOUTHILLIER, F. & SHEARER, K. 2002. Understanding knowledge management and information management: the need for an empirical perspective. *Information research journal* 8(1), Oct.

<http://informationr.net/ir/8-1/paper141.html>

Retrieved on 26 August 2010.

BOYCE, J. 2002. *Market Research in Practice*. Sydney: McGraw-Hill.

BRACE, I. 2008. *Questionnaire Design: How to plan, Structure and Write Survey Material for Effective market Research*, *Market research in practice series*. 2nd ed. London: Kogan Page Publishers.

BRIDGES.ORG. 2005. Comparison Study of Free/Open Source and Propriety Software in an African context. Implementation and Policy-Making to optimise Public Access to ICT. Bridges.org. Durbanville.

http://www.iisi.de/fileadmin/IISI/upload/C_T/2007/Coetzee.pdf

Retrieved on 04 May 2012.

BRINK, H.I. 2002. *Fundamental of Research methodology for health care professionals*. Cape Town: Juta.

BURNS, N. & GROOVE, S.K. 2003. *Social research*. New York: MacMillan.

BUSINESS DAY. 2005. Rural Community Project. September 9.

BUSINESS DICTIONARY.COM. 2009. Internet.

<http://www.businessdictionary.com/definition/internet.html>

Retrieved on 26 June 2011.

BUTLER, R. 2005. 'Cell phones may help "save" Africa.

<http://www.mongabay.com>

Retrieved 20 October 2013.

CARR, N.G. 2004. *Does it Matter? Information Technology and the corrosion of Competitive Advantage*, Boston, MA: Harvard Business School Press.

CASTILLO, J.J. 2009. Experiment Resources: Convenience Sampling.

<http://www.experimentresources.com/convenience-sampling.html>.

Retrieved 10 July 2013.

CHISENGA, J. 2004. Digital divide and e-governance in South Africa.

http://www.ais.up.ac.za/digi/docs/mphidi_paper.pdf

Retrieved on 25 September 2011.

CHURCHILL, G.A. 1995. Marketing Research Methodological Foundations. 6th ed. The Dryden: United States of America: 1117.

COETSEE, L.D. 2002. Peak Performance and productivity: a practical guide for creation of a motivating climate. Potchefstroom: Ons drukkers.

COETZEE, D. 2001. South African education and the ideology of patriarchy, *South African Journal of Education* 2001, 21(4):3000-304.

COHEN, L., MANION, L. & MORRISON, K. 2002. Research methods in education. London: Routledge Falmer.

COLEMAN, S. 2009. Africa e-government opportunities and challenges. University of Oxford: oxford Internet Institute.

COLLE, R.D & ROMAN, R. 2001. Modules for training telecentres Staffs: an interim report with sample modules.

<http://www.lis.uzulu.ac.za/etds/bmbatha/bmbathaetd.pdf>

Retrieved on 20 March 2011.

COMMUNICATIONS 2000. 1996. *A vision for government communications in South Africa*. (Comtask report).

<http://www.gcis.gov.za>.

Retrieved on 10 March 2012.

COMTASK. 1996. Communications 2000: A vision for government communication in South Africa. Final report of the Task Group on Communications to Deputy President Thabo Mbeki. African National Congress. <http://www.polity.org.za/govdocs/commissions//comtask.html>

Retrieved on 18 October 2012.

COMTASK. 1996. Communications 2000: The Government Development Communication Initiative: A response to Democratic Communication and Citizen Participation in South Africa. Final report of the Task Group on Communications to Deputy President Thabo Mbeki. http://www.thusong.gov.za/documents/policy_legal/gdc.htm

Retrieved on 18 October 2012.

CONRADIE, D.P. & JACOBS, S.J. 2003. *Challenges encountered when using ICTs (Information and Communication Technologies) in support of development in rural African communities. Engineering Management* 30-33, February 2003.

CONRADIE, P. & JACOBS, J. 2003. Bridging the digital divide. *Engineering Management*: 30-34.

COOPER, D.R. & SCHINDLER, P.S. 2003. *Business Research Methods*. 8th ed. McGraw-Hill: New York.

COOPER, D.R. & SCHINDLER, P.S. 2006. *Business Research Methods*. McGraw-Hill.

CRESSWELL, A.M., PARDO, T.A., CANESTRATO, D.S. & DAWES, S.S. 2005. Why assess information sharing capability? Centre for technology in government.

http://www.ctg.albany.edu/publications/guides/why_assess/why_assess.pdf

Retrieved on 29 August 2010.

CULLEN, R. 2002. *Addressing the digital divide*: 311-320. Online information review 25(5).

<http://www.asis.org/Chapters/europe/news/dolnicar.pdf>.

Retrieved 10 April 2013.

CULLEN, 2003. The digital divide: a global and national call to action. *The Electronic Library* 21(3):247-257.

DE CROM, E.P. & DE JAGER, A. 2005. The “ME”-Learning Experience; PDA Technology and E-Learning in Ecotourism at the Tshwane University of Technology (TUT). *Proceedings of the mLearn 2005 Conference, Cape Town, South Africa, 25-28 October 2005.*

DYMOND, A., S. OESTMAN., K. WHITTING., C. SMITHERS., C. MILNE. & R. MILNE. 2008. Telecentres and poor communities in South Africa: What have we learnt?

http://sds.ukzn.ac.za/files/Attwood%20and%20Braathen_Telecentres%20and%20Poor%20communities%20in%20South%20Africa.PDF

Retrieved on 25 August 2011.

DYMOND, A.C. & OESTMANN, S.N.D. 2001. Telecentres-experiences, lessons and trends.

<http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/chapter%2001.pdf>

Retrieved on 14 July 2011.

E-GOVERNMENT. 2005. Digital Economy.

<http://www.egov.vic.gov.au/International/Africa/SouthAfrica/southafrica.htm#saegovernment-SouthAfrica>

Retrieved on 24 July 2011.

EDDY, N. 2011. Mobile Internet usage to top wire-line surfing by 2015: IDC Report. <http://eWeek.com>.

Retrieved on 12 September 2012.

EVANS, D. & YEN, D.C. 2006. E-Government: evolving relationship of citizens and government, domestic, and International development. *Government Information Quarterly* 23(2):207-235.

<http://www.zaw3.co.za/index.php/ZA-WWW/2009/paper/viewFile/156/19>

Retrieved on April 2012.

FARELO, M & MORRIS, C. 2006. The Status of E-government in South Africa.

http://researchspace.csir.co.za/dspace/bitstream/10204/966/1/Farelo_2006_D.pdf

Retrieved on 14 February 2011.

GAUTRIN, H.F. 2004. Connecting Quebec to its Citizens. Report on E-Government for Verdun, Parliamentary Assistant to the Premier.

GILLHAM, B. 2000. *Developing a questionnaire*. 1st ed. London: Continuum.

GILLWALD, A. 2001a. *Policy and Regulatory Challenges of digital divide*. Midrand: International Telecommunications Unions Africa Telecom 2001 Conference paper.

GODDARD, W. & MELVILLE, S. 2001. *Research Methodology: an Introduction*. 2nd ed. Lansdowne: Juta.

GOVERNMENT GAZETTE REPORT. 2000.

<http://www.greengazette.co.za>.

Retrieved on 17 July 2011.

GRAVETTER, F.J. & FORZANO, L.B. 2003. *Research methods for the behavioral sciences*. Belmont: Wadsworth/Thompson Learning.

GRINNEL, R.M. & UNRAU, Y.A. 2008. *Social work research and evaluating: foundations of evidence-based practice*. New York: Oxford University Press.

GURUNG, J.B. 2009. *Telecentre – An Approach using ICT for Rural Community Development in Nepal*. Retrieved on 25 April 2011.

HERBST, F. J. 2001. *An investigation of the product life cycle concept as an instrument in marketing decision-making for selected small organisations in South Africa*. Unpublished D Comm. Thesis, November 2001: University of Pretoria.

HORSFALL, M. & CAIRNS, S. 2001. *Office skills: a practical approach*. Sydney: McGraw-Hill/Irwin.

HOWE, W. 2010. *Anecdotal history of the people and communities that brought about the Internet and the Web*.

<http://www.Walthowe.com>.

Retrieved on 20 April 2012.

ISLAM, S. & HASSAN, N. 2009. *Multipurpose Community Telecentres in Bangladesh: Problems and Prospects*. *The Electronic Library* 27(3):537-553.

JACOBS, S. & HERSELMAN, M. 2006. *Information Access for Development: A Case Study at a Rural Community Centre in South Africa*. Issues in information Science and Information Technology Volume 3, 2006.

<http://informingsscience.org/proceedings/InSITE2006/IISITJaco113.pdf>

Retrieved on 01 September 2011.

JACOBS, S.J. & HERSELMAN, M.E. 2006. *Integrated service delivery: From model to prototype*. South African Journal of Information Management. Vol 8(3), September 2006.

JOHNSON, B. & CHRISTENSEN, L. 2004. *Education research: quantitative, qualitative and mixed approaches*. 2nd ed. Boston: Allan & Bacon.

JOHNSON, K. 2009. *Older People and Communications Technology, One voice, Shaping our ageing society*. New York: Hartcourt Publishers.

KAHL, F. 2001. Fast strong approximation monte carlo scheme for statistics. *Journal of Quantttative finance*. Vol 6:1-36.

KERLINGER, F. N. & LEE, H. B. 2000. *Foundations of behavioural research*. 4th ed. New York: Harcourt Publishers: 321.

KROUKAMP, H. 2005. *E-governance in South Africa: are we coping*. Acta Academia 37(2):52-69.

KUTU MPHAHLELE, M.E. & MAEPA, M.E. 2003. Critical success factors in telecentre sustainability: a case study of six telecentres in Limpopo. *Communication* 29(1&2):218-232.

LANGFORD, R.W. 2001. *Navigating the maze of nursing research: an interactive learning adventure*. St Louis, Mosby.

LAU, e. 2003. Challenges for e-Government development. OECD-Government project organisation for economic and development. 5th *Global Forum on Reinventing Government* Mexico City. Mexico, 5 November.

LAUDON, K.C. & LAUDON, J.P. 2010. *Management Information Systems: Managing the Digital Firm*. 11th ed. Pearson Education Inc., Upper Saddle River. Cambridge: Course Technology Inc.

LEEDY, P.D. 1993. *Practical research: planning and design*. New York: MacMillan.

LEEDY, P.D. & ORMROD, J.E. 2005. *Practical research: planning and design*. New York: Pearson Merrill Prentice Hall.

LEINER, B.M., CERF, V.G., CLARK, D.D., KARN, R.E., KLEINROCK, L., LYNCH, D.C., ROBERTS, L.G. & WOLF, S.S. 1997. The past and future history of the Internet: the science of future technology. *Communications of the ACM*, Vol.40(2):102-108. [In ACM-Digital Library, Full display.

<http://www.isoc.org/internet-history.html>

Retrieved on 11 October 2012.

LEWIS, M.A. 2003. "Analysing organizational competence: implications for the management of operations", *International Journal of Operations & Production management* Vol.23(7):731-756.

LEWIS, A. (Ed.). 2003. *Shaping the future of American youth: Youth policy in the 21st century*. Washington, DC: American Youth Policy Forum.

http://www.aypf.org/publications/shaping_future_youth.Pdf

Retrieved on 12 September 2011.

LOR, P.J. & Van As, A. 2002. Work in progress: developing policies for access to government information in the new South Africa. *Government information quarterly* 19:101-121.

http://cnplinker.cnpeak.com/outline_article.jsp?channelid=70050&searchword=iid%3d194621&sortfield=pgf

Retrieved on 25 November 2011.

LUDEMAN, K. & ERLANDSON, E. 2013. The Alpha Male Syndrome. <http://www.worthethic.com/the-alpha-male-syndrome.html>.

Retrieved on 12 May 2013.

MAILA, M. 2006. Community projects get biggest slice. *Capricorn Voice*. 6-7 June. Polokwane. South Africa.

MAJANJA, M. 2004. Mapping and Auditing of Information and Communication Technologies in Library and Information Science education in Sub-Saharan Africa. Ph.D thesis. (unpublished), University of Zululand. South Africa.

MALHOTRA, N. K. 2004. *Marketing Research: An Applied Orientation*. 4th ed. Englewood Cliffs, N.J: Prentice-Hall.

MAREE, K. & PIETERSEN, J. 2007. The quantitative research process. In Maree, k., *First steps in research*. Pretoria: Van Schaik.

MASERUMULE, M.H. 2007. Pedigree Nexus of Batho Pele Principles – Where is the tie? *Service Delivery Review* 6(1):89-91.

MBEKI, T. 2003. *State of the Nation Address*, Cape Town.

<http://www.info.gov.za/speeches/son/index.html#2003>.

Retrieved on 06 June 2012.

MBEKI, T. 2005. *Address of the President of South Africa, Thabo Mbeki, at the World Summit on the information Society*, Tunis, 16 November.

<http://www.thepresidency.gov.za/pebble.asp?relid=3168&t=79>

Retrieved on 07 May 2012.

MBEKI, T. 2005. Address at the national council of provinces in Limpopo.

<http://www.dfa.gov.za>.

Retrieved on 24 Jan-2012.

McCLURE, C. R., SPREHE, J. T. & ESCHENFELDER, K. 2000. Performance Measures for Federal Agency Websites. Defense Technical Information Center and Energy Information Administration. U.S. Government Printing Office.

<http://www.academicjournals.org/AJBM/PDF/pdf2011/30Sept/Subbiah%20and%20Ibrahim.pdf> Retrieved on 02 May 2012.

MCNEILL, P. & CHAPMAN, S. 2005. *Research methods*. 3rd ed. New York: Routledge.

MELLENBERGH, G. 2008. Chapter 10: Tests and Questionnaire: Construction and administration. In H.J. Ader & G.J. Mellenbergh (Eds) (with contribution by D. J. Hand), *Advising on Research Methods: A consultant's companion*: 211-236. Huizen, The Netherlands: Johannes van Kessel Publishing.

MISNIKOV, Y. 2005. What and Whose e-government we want? An end-user's dimension of e-services in Central Eastern Europe: lessons and questions. A contribution to the e-government workshop, Prague, Czech Republic, 26 April, 2005.

MLITWA, N. 2004. Global Perspectives on High Education and the Role of ICT, Lecture delivered at the Cape High Education Consortium Conference. Information & Communication Services (ICS), University of the Western Cape:1-9.

MNJAMA, N. & WAMUKOYA, J. 2007. *E-government and records management: an assessment tool for e-records readiness in government*. *The Electronic Library* 25(3):274-284.

http://www.ais.up.ac.za/digi/docs/mphide_paper.pdf

Retrieved on 25 April 2012.

MOGALE, I. S. a *South Africa: Technologically divided*.

<http://www.wfsnews.org/citylife/inside2.html>.

Retrieved on 28 May 2012.

MONETTE, D.R., SULLIVAN, T.J. & DE JONG, C.R. 2008. *Applied social research: a tool for the human services*. 7th ed. Belmont, CA: Thomson Wadsworth.

MORLEY, D. & PARKER, C.S. 2006. *Computers and Technology in a changing Society*. 2nd ed. Boston: Thompson Course Technology.

MOTLANTHE, K. 2012. Statement of the Deputy president, Kgalema Motlanthe, at the opening of the inaugural ICT Indaba 2012, International Convention Centre, Cape Town, 05 June 2012.

<http://www.iol.co.za/capetimes/kgalema-motlanthe-opens-ict-indaba-1.1312247>

Retrieved on 08 June 2012.

MOUNTON, J. 2001. *How to succeed in your masters and doctoral studies; A south African guide and resource book*. 1th ed. Pretoria: Van Schaik Publishers.

MUTULA, S. 2005. Bridging the digital divide through e-Government: Proposal for Africa's libraries and information centres. *The electronic library* 23(5):591-602.

NEUMAN, W.L. 2006. *Social research methods: qualitative and quantitative approaches*. 6th ed. Boston: Pearson Education Inc.

NORMAN, B. 2004. *Analyzing Quantitative Data from Description to Explanation*. London: SAGE Publications.

NTETHA, M.A. 2010. Some implications of Information and Communication Technologies (ICTs) on public service work environments in South Africa.

<http://www.lis.uzulu.ac.za/2011/Mbatha%20Ocholla%20and%20Le%20RouxProlissa%202011c,dec%2014.pdf>.

Retrieved on 05 June 2012.

OATES, B. J. 2006. *Researching Information Systems and Computing*. London: Thousand Oaks, Calif: SAGE: 341.

OLIVIER, M.S. 2009. *Information Technology Research. A practical guide for Computer science and Informatics*. 3rd ed. Pretoria: Van Schaik Publishers.

ONKAETSE MMUSI, S. 2005. Telecentres and their Potential for Rural Community Development. In N.C. Lesame (ed) *New Media: Technology and Policy in Developing Countries*. Pretoria: Van Schaik.

OWEN, W. & DARKWA, O. 2000. Role of Multipurpose Community Telecentres in Accelerating National Development in Ghana. Volume 5, Number 1-3 January 2000.

<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/722/631>

Retrieved on 15 March 2012.

PAHAD, E. 1998. *GCIS and the way forward. Conference report of government communicators' consultative conference*.

<http://www.gcis.gov.za>

Retrieved on 25 March 2012.

PARSONS, J. 1982. Socialization of achievement attitudes and beliefs: parental influences. *Child Deviations* 53:310-321.

PEPPARD, J. & RYLANDER, A. 2005. Products and services in cyberspace. *International Journal of Information Management* 25(4): 335-345.

<http://www.zaw3.co.za/index.php/ZA-WWW/2009/paper/view/156/19>

Retrieved on 04 May 2012.

POLIT, D.F & HUNGLER, B.P. 1991. *Essentials of nursing research: methods, appraisal and utilization*. 4th ed. Philadelphia: JB Lippincott.

POLIT, D. F. & BECK, C. T. 2008. *Nursing research: generating and accessing evidence for nursing practice*. 8th ed. Philadelphia: Lippincott.

POTGIETER, C. 2004. The Impact of the implementation of technology education on In-Service Teacher Education in South Africa (impact of technology education in RSA). *International Journal of Technology and Design Education* 14:205-218.

PULE, D. 2012. Statement of the Minister of Communications, Dina Pule, at her opening of the inaugural ICT Indaba 2012, International Convention Centre, Cape Town, 05 June 2012.

<http://www.iol.co.za/pretoria-news/plan-to-boost-info-technology-1.1311916>

Retrieved on 05 June 2012.

RAMATLHODI, N. 2002. Address of the premier of Limpopo province, Ngoako Ramatlhodi, at the opening of the Marula project, Polokwane.

RAO, S. 2003. *Information systems in india rural communities* 44: 48-56. *Journal of Computer Information Systems*.

RAO, N.H. 2006. A framework for implementing information and communication technologies in agricultural development in India. *Technological Forecasting & Social change* 74: 491-518.

REILLY, K. & GOMEZ, R. 2001. Comparing approaches: Telecentre evaluation experiences in Asia and Latin America. Ottawa: Carleton University and Independent Development Research Centre (IDRC). *Electronic Journal of Information Systems in Developing Countries* 4(3):1-17.

ROSENBERG, D. 2001. The sustainability of libraries and resource centres in Africa. In Stilwell, C., Leach, A & Burton, S.(Eds). *Knowledge, Information and development: an African perspective*. Pietermaritzburg: University of Natal: 11-24.

ROSNOW, R.L. & ROSENTHAL, R. 1996. *Beginning Behavioral Research: A Conceptual Primer*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

ROTHSCHILD, C. 2008. Incorporating Predicators of Success for Telecentre Project: A Qualitative Analysis of 17 Developing Countries: Master of Arts in International Studies, Henry M. Jackson School of International Studies University of Washington.

RUBIN, A. & BABBIE, E. 2005. Research methods for social work. 5th ed. Australia: Thompson Brooks/Cole.

RUSSEL, E.W. & BVUMA, D.G. 2001. "Alternative service delivery and public service service transformation in South Africa", *International Journal of Public Sector Management* 14(32):241-265.

SACOD (*South African Concise Oxford Dictionary*). 2002. Cape Town: Oxford University Press.

SALKIND, N.J. 2006. *Exploring research*. 6th ed. New Jersey: Pearson Education.

SARANTAKOS, S. 2005. *Social research*. 3rd edition. New York. Palgrave MacMillan.

SCHEEDER, D. 2008. Knowledge management: towards understanding in a multicultural world. Library of Congress Law library. Washington DC, USA. 1-6.Aug.

SCHULZE, S. 2003. Views on the combination of quantitative and qualitative research approaches. *Journal of Progressio* 25(2):8-20.

SCHWANDT, T.A. 2001. Dictionary of qualitative inquiry. 2nd ed. Thousand Oaks, CA: Sage Publications.

SHARMA, S. & ARAGON-CORREA, J.A. 2005. "Corporate Environmental Strategy and competitive Advantage: A Review from the past to the Future." Edward Elgar Academic Publishing, Northampton.
http://www.dge.ubi.pt/investigacao/TDiscussao/2010/TD05_2010.pdf
Retrieved on 12 April 2011.

SHELLY, G.B., CASHMAN, T.J. & WAGGONER, G.A. 1997. Discovering Computers. A link to the future, World Wide Web Enhanced.

SIROTA, D., MISCHIKIND, L.A. & MELTZER, M.I. 2006. Why your employees are losing motivation.
http://harvardbusinessonline.hbsp.harvard.edu/hbsp/resource_centers
Retrieved on 29 August 2010.

SMIT, P.J., CRONJE, G.J., BREVIS, T. & VRBA, M.J. 2011. *Management Principles: A Contemporary edition for Africa*. 5th ed: Juta & Company Ltd.

SOPHOS. 2008. Sophos-anti-virus and anti-spam software for business.
http://www.sophos.com/?origin_id=215&productlang_id=9&lang_id
Retrieved on 15 September 2011.

SOWETAN. 2012. Rural people urged to know their rights. 22 March:8.

STATSSA, 2002. Income and expenditure of households 2000, South Africa, Statistical release P0111, Pretoria.

STATSSA, 2006. Limpopo province profile, Report-00-91-09, Pretoria.

THOMAS, J.C. & STREIB, G. 2003. The new face of e-government: Citizen initiated contacts in the era-of e-government. *Journal of Public Administration Research and Theory* 13(1):83-102.
<http://www.zaw3.co.za/index.php/ZA-WWW/2009/paper/viewFile/156/19>
Retrieved on April 2012.

TURBAN, E., MCLEAN, E. & WETHERBE, J. 2004. *Information Technology for Management: Transforming organizations in the digital economy*. 4th ed. John Wiley & Sons.

UNITED NATIONS DEVELOPMENT PROGRAMME. 2001. Human Development Report: Making Technologies Work for Human Development 24(3):1-35.

UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION. 2000. UNESCO REPORT. 2000.

<http://www2.ohchr.org/english/issues/education/training/unesco.htm>

Retrieved on 17 July 2011.

UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION. 1999. Unesco Report, 1999.

<http://unesdoc.unesco.org/images/0012/001295/129557e.pdf>

Retrieved on 20 October 2011.

UNRAU, Y.A., GABOR, P.A. & GRINNEL, R.M. 2007. *Evaluation in social work: the art and science of practice*. London: Oxford University Press.

WARSCHAUER, M. 2003. *Technology and Social Inclusion: Rethinking the Digital Divide*; MIT Press: Cambridge, MA, 2003.

http://www.iisi.de/fileadmin/IISI/upload/C_T/2007/Coetzee.pdf

Retrieved on 04 May 2012.

WARSCHAUER, M. 2003. *Social Capital and access*. Universal Access in the Information Society.

WEGNER, T. 2000. *Quantitative methods for marketing research*. In association with the Institute of Marketing Management. Kenwyn: Juta.

WELMAN, C., KRUGER, F. & MITCHEL. 2005. *Research Methodology*. 3rd ed. Cape Town: Oxford University Press.

WEST, D.M. 2000. Innovating in digital government in the American states.

<http://www.accessmylibrary.com/article-1G1-99144943/innovating-digital-government-america.html>.

Retrieved on 04 April 2012.

WEST, D.M. 2003. E-Government Theory and Practice: The evidence from Tennessee (USA).

WEST, D. 2004. E-Government and the Transformation of service delivery and the citizen attitudes. *Public Administration Review* 64(1):15-27.

<http://www.iseing.org/egov/eGOV06/Accepted%20Papers/604/CRC/eGOV06-604%20CRC.pdf>

Retrieved on 02 February 2011.

WHYTE, A. 2001. Assessing Community Telecentre: Guidelines for Research, Canada. International Development research Centre.

WIJEWARDENA, M. 2002. Assessment of existing empirical analyses of the underlying causes of the digital divide – ideas for policy makers.

<http://www.gtlaw.com.au/t/publications/default.jsp?pubid=385>

Retrieved on 28 May 2012.

WILLSON, J. & OULTON, T. 2000. Controlling access to the Internet in UK public libraries. *OCLC Systems and Services* 16(4):194-201.

http://portal.unesco.org/ci/en/files/15562/10832326061In_search_of_sust_telecenters_in_Africa.doc/In%2Bsearch%2Bof%2Bsust%2Btelecenters%2Bin%2BAfrica.doc.

Retrieved on 14 March 2012.

WOOD, M.J. & KERR. 2010. *Basic Steps in Planning Nursing Research: From Question to Proposal, Basic Steps in Planning Nursing Research*. 7th ed. London: Jones & Bartlett Learning.

WRESCH, W. 1996. *Disconnected: Haves and Have-Nots in the Information Age*. New Brunswick: Rutgers University Press.

<http://www.idrc.za>

Retrieved on 04 May 2012.

<http://led.co.za/municipality/sol-plaatje-local-municipality>.

Retrieved on 25 March 2012.

YUSOP, N.I., MUHD, K., KASIRAN, M.Z. & AJIAND ZULKHAIRI. 2009. Community Participation as a Determinant of Telecentres' Success: Pusat Kajian e-komuniti, FSSK, UKM 18-19 Mac 2009. Hotel PNB Darby Park, Kuala Lumpur.

ADDENDA

ADDENDUM – A: QUESTIONNAIRE

DEMOGRAPHIC DETAILS

SECTION A: BACKGROUND INFORMATION

Please supply the following personal information. Please make a circle (0) where applicable.

1. Please indicate your gender?

1. Male	2. Female
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2. Which of the following are the information needs of the community?

1. Community development	2. Service delivery	3. Search jobs	4. Municipal budget
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3. What are the dangers/shortcomings of not having the information?

1. No Community participation	2. Service delivery protest	3. Poor performance	4. No development
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4. What are the problems associated with providing accessing the information

1. Cost	2. Lack of access facilities	3. Non-availability of online system	4. Lack of awareness	5. Physical access
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5. How is the current study seeking to address some (or all) of these issues?

1. Do not know	2. Provide training & capacity building	3. Provision of e-government	4. Provision of ICT	5. Provision of telecentre
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6. How will the results of the study be communicated/presented to help address these issues?

1. Radio	2. Community meeting
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7. Which method do you use to access information?

1. Newspaper	2. Radio	3. Television	4. Community meeting
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8. Which age group do you fall in?

1. 1 - 10 Years	2. 11 – 25 Years	3. 26 – 45 Years	4. 46 – 60 Years	5. 61 Years and above
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9. Indicate your highest qualification obtained

1. High School	2. Diploma	3. Degree	4. Primary School
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10. What is your occupation?

1. Government sector	2. Private sector	3. Own business	4. Student	5. Not working	6. Farm worker
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11. What is your monthly salary?

1.R1-R199	2.R200-R399	3.R400-R799	4.R800-R999	5.R1000-R1199	6.R1200 and more
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12. How far (distance) is your place from the telecentre?

1.Less than 1 kilometre away	2.1 to 2 kilometres away	3.3 to 4 kilometres away	4.5 to 6 kilometres away	5.More than 7 kilometres away
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13. How (transport) do you usually get to the telecentre?

1.I walk	2.By bicycle	3.By taxi	4.By bus	5.By my own car
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Thank you for your co-operation in completing this questionnaire.

MEMORANDUM

**TO : THE MAYOR
MARULENG MUNICIPALITY
HOEDSPRUIT**

**FROM : MR M. MKHONTO
P.O. BOX 322
KLERKSDORP
2570**

DATE : 05 March 2011

APPLICATION TO CONDUCT A RESEARCH STUDY AT THE OAKS AND FINALA VILLAGE

I hereby apply to conduct a research study at your institution as part of my studies towards a Masters' in Information Technology.

The topic of my research is **an investigation into the lack of effective government information accessibility system for a community in the remote areas of South Africa.** The aim of this study is to find out how the community in the remote areas of South Africa access government information.

I would be grateful if my request can be granted.

Yours truly

M.Mkhonto

MEMORANDUM

**TO : THE MAYOR
SOL PLAATJE MUNICIPALITY
KIMBERLEY**

**FROM : MR M. MKHONTO
P.O.BOX 322
KLERKSDORP
2570**

DATE : 05 MARCH 2011

APPLICATION TO CONDUCT A RESEARCH STUDY AT HEUNINGVLEI AND GALESHEWE VILLAGE.

I hereby apply to conduct a research study at your institution as part of my studies towards a Masters' in Information Technology.

The topic of my research is **THE EFFECTIVE GOVERNMENT INFORMATION ACCESSIBILITY SYSTEM FOR A COMMUNITY IN THE REMOTE AREAS OF SOUTH AFRICA**. The aim of this study is to find out how the community in the remote areas of South Africa access government information.

I would be grateful if my request can be granted.

Yours truly

M.Mkhonto

CONSENT FORM

I am a registered student with the Central University of Technology. I have registered for MTech in Information Technology and therefore have to do **THE EFFECTIVE GOVERNMENT INFORMATION ACCESSIBILITY SYSTEM FOR A COMMUNITY IN THE REMOTE AREAS OF SOUTH AFRICA.**

The purpose of this research is to find out problems encountered by the community in the semi-urban area, and again to find out how these problems can be solved.

CONSENT

I _____ hereby consent to participate in the study as outlined above.

Signed at _____ on the (DATE) _____