THE USERS' PERSPECTIVES TOWARDS THE ROLE OF PUBLIC LIBRARIES IN BRIDGING THE DIGITAL DIVIDE IN NGAKA MODIRI MOLEMA DISTRICT

BY

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Submitted in partial fulfilment of the requirements for the degree

Masters in Information Studies

In the

FACULTY OF HUMANITIES

(School of Languages and Communication Studies)

Department of Media, Communication and Information Studies

At the

UNIVERSITY OF LIMPOPO

(Turfloop Campus)

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DECEMBER 2016

Declaration

I declare that this dissertation hereby submitted to the Programme of Information Studies, Department of Media, Communication and Information Studies belongs to me and has not been submitted to any other university for a degree purpose. I also declare that this is my work and all references have been duly acknowledged.

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Dedication

This work is dedicated to my family, my daughter, Kopano Blessing Mahlakwane, and the Department of Media, Communication and Information Studies, Programme of Information Studies at the University of Limpopo (Turfloop Campus).

Acknowledgements

I would like to acknowledge with gratitude the following people who have contributed to the success of this study:

1. My supervisor Dr. S.T. Bopape for his constant support and supervision throughout this study.

2. All the lecturers in the Programme of Information Studies for their support and guidance throughout this study.

3. Librarians from the Department of Sports, Arts and Culture, North West Provincial Government, for their support and granting me access to collect data.

4. Users of the public libraries in Ngaka Modiri Molema District for their participation in this study.

Abstract

This study investigated the users' perspective of the role played by public libraries in bridging the digital divide in the rural-urban communities with specific reference to Ngaka Modiri Molema District libraries, in the North-West Province, South Africa. The research methodology utilized in this study is a descriptive survey in design and quantitative in nature, through a questionnaire as a data collection tool, distributed to hundred (100) library users selected through quota, convenience and accidental sampling methods. Twenty (20) library users belonging to each of the five public libraries in the district participated in the study. It is revealed that public libraries in the Ngaka Modiri Molema District are playing a significant and crucial role in bridging the digital divide. This is due to the fact that the library users have indicated that they are able to conduct research, send and receive e-mails; they are able to type their personal and academic documents and even play computer games with the library computers and the internet. Based on these findings, this study recommends that district municipalities and the provincial government should continue to provide the public libraries with computers connected to the internet to all the libraries in Ngaka Modiri Molema District and to train the public librarians to be able to impart computer skills to the communities. Public librarians should also initiate computer orientation courses to provide basic skills to those who are computer illiterate in the communities.

KEY TERMS: Public libraries, digital divide, the internet access, computers, Ngaka Modiri Molema district, North-West Province.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

The existence of digital inequality in different societal, civic and employed clusters has led to the development of the digital information rich and digital information poor clusters within the communities, and perhaps also worldwide. The term "digital divide" has been utilized since the 1990s to define forms of imbalanced access to information technology, basically, computers and the internet, which is founded on the income, ethnicity, geographic location, and the age of the community, including other aspects that are attributable to inequitable access to information (Chisenga, 2004:120). In most cases, the digital divide has progressed to more broadly defined inequalities in technology usage, resulting from the absence of access, and skills or interest in using information technology (Heuertz, 2003:96). The word "digital divide" also defines the reality that the world can be separated into two clusters, namely, those who "have" access to computers and the internet, and those who "do not have" access to, and the lack of ability to use recent information technology, such as computers and the internet (Kraynak, 2007:26).

The dilemma of the digital divide in South Africa is the disparity in access to Information and Communication Technology (ICT) which may be the effects of the differences in class, race, age, culture, and geographical location of the people, or other aspects of the community that can effectively limit certain people to play an integral role in the international economy (Kroukamp, 2005:112). Therefore, there is a need for the government around the country, to bridge this disparity or inequality by providing free access to computers and the internet. Public libraries are therefore observed by many as physically and programmatically able to deliver not only physical access to books, computers, and the internet, but also to a certain extent of helping the

communities with computer and information literacy programmes (James, 2012:59). Virtually, most public libraries offer public access to computers and the internet as a primary role of their mission and vision across the world. These technologies play a crucial role in connecting the technological or the digital bridging between the "information haves" and the "information have nots" in the digital age. Public libraries should offer free access to resources and the internet services to those who cannot, by any means, access these facilities.

Throughout their history, public libraries in South Africa have also functioned to eradicate the imbalances in access to information. With the introduction of the information age and its complementary digital divide, there are new issues that are facing public libraries as they try to offer quality information services for the information poor. The information poor in South Africa are basically recognized as the economically poor, the uneducated, ethnic factions, and the elderly people. In reply to these issues, public libraries have established the internet connectivity, purchased computers and other technological resources, compiled access policies, established procedures, and trained their staff to utilize the new technological resources. Public libraries should play a crucial role in bridging unequal access to computers and the internet, especially in communities where there are a plethora of socio economic barriers and disparities, such as geographic location, income, education and affordability of access to the internet and other ICT's. Hendrix (1997:241) states that "public libraries have long been recognized as important players in providing equal access to computers and the internet." Their role in bridging the digital divide is to make sure that ICT services such as computers and the internet are freely accessible to all members of the community, irrespective of a person's race, gender, religion, cultural background, creed or belief. This allows underprivileged people to have access to ICT services, just like the information rich people.

In this study, the role played by public libraries in bridging the digital divide in communities is investigated. Public libraries attached to Ngaka Modiri Molema District in the North-West Province have been selected as the focus area of

the study. "These libraries offer access to knowledge, information and works of the imagination through a range of resources and services, and they are equally available and accessible to all members of the community regardless of race, nationality, age, gender, religion, language, disability, economic, employment and educational status" (Ntulo and Otike, 2001:1).

1.2 Problem Statement

Before the ushering in of democracy in 1994, the South African people, in particular black people, were excluded from accessing information through the use of computers and the internet due to the prevailing disparities in the distribution of socio-economic benefits, inequalities associated with access to ICT's, and lack of prerequisite knowledge and skills needed to use information technology in order to enhance one's personal, economic, and employment goals. There was also a lack of provision of public library services to black communities. Today, the provision of computers and the internet, especially to black people in public libraries is recognized and acknowledged, even though there are people from rural areas who are still without public libraries and ICT connectivity. Nevertheless, there is still a need to identify and document the perspectives, opinions and satisfaction of users, more especially those in the communities where the government has made some strides to overcome unequal access to information.

In Ngaka Modiri Molema District of the North West Province in particular, public libraries in the communities provide computer and internet access to children, the youth and adults, some of whom come from impoverished backgrounds. Explicably, the assumption is that there are still inequalities in terms of access to ICT's, which include access to computers and the internet due to some socio-economic barriers. It is therefore important to understand, and thus to explore the role of public libraries in bridging the digital divide in Ngaka Modiri Molema District from the users' perspectives. Ascertaining the perspectives of the users with regard to the role played by public libraries in bridging the digital divide would assist the authorities in attending to other

areas where these inequalities are still prominent. The challenge to policymakers is to identify effective mechanisms which include the provision of ICT resources to people through public libraries, especially the disadvantaged, in order to reduce these disparities, and to develop strategies for eradicating the digital divide. Therefore, through this study, the North West Province Public Libraries and Archives Directorate in the Ngaka Modiri Molema District will be able to evaluate and measure whether or not their public libraries are playing any role in bridging the digital divide in the district.

1.3 Purpose of the study

1.3.1 Aim of the study

The aim of the study is to investigate the users' perspective on the role played by public libraries in Ngaka Modiri Molema District in bridging the digital divide.

1.3.2 Objectives of the study

The following are the objectives of this study:

- To identify how the demographic characteristics of users of Ngaka Modiri Molema District public libraries serve as determinants of access to computers and the internet.
- To identify whether or not users are benefiting from using computers and the internet in Ngaka Modiri Molema District libraries;
- To evaluate user satisfaction with computer and the internet services provided by public libraries in Ngaka Modiri Molema District; and
- To assess the provision of access to computers and the internet by public libraries in Ngaka Modiri Molema District.

1.4 Significance of the study

According to Mouton (2001:151), "significance of the study establishes why the proposed study matters". The significance of the study offers the framework for organizing and understanding the circumstantial background of the research. The current study began when the researcher informally observed that the North West provincial government provides all the members of the communities in the province with free access to computers and the internet, giving equal access to both the rich and the poor. This initiative by government through public libraries is an attempt to bridge the digital divide so that the information "haves" and "have nots" will have equal access to computers and the internet.

Studies such as this one will, therefore, help to maintain and sustain the role of public libraries to continue providing access to computers and the internet, especially in rural communities. This study will enable district policymakers to approve and allocate more financial resources to the provision of free access to computers and the internet in public libraries. Hopefully, the constant provision of both computers and the internet will be prioritized in public libraries. On the part of public libraries, librarians will have to undergo computer training courses to enable them to answer computer and the internet related queries in order to help them provide effective assistance to the users of computers and the internet.

The findings of this study will help the researcher to recommend solutions to the problems experienced in public libraries related to bridging the digital divide in Ngaka Modiri Molema District. It will also help the Director of Libraries and Archives in the province, and the managers in the district, to equip public libraries with information communication technological resources in order for them (the libraries) to continue bridging the digital divide in the district.

This study also explores the overall framework of knowledge base for further research into the topic. It will contribute to this emergent body of knowledge as far as the provision of policy recommendations, guidelines and strategies

for ICT literacy relating to the bridging of the digital divide based on its outcomes. In addition, it will serve as a basis for future research in other predominantly rural provinces.

1.5 Delineation of the study

1.5.1 Users' perspective

This study critically explores the users' perspectives with regard to public libraries in terms of their role in bridging the digital divide. "User perspectives involve a person's behaviours, attitudes, and emotions about using a particular product, system or service" (Garrett, 2002:18). In this study the users' perspective refers to the behaviour, attitudes and the understanding, as well as their satisfaction or dissatisfaction with the role of public libraries in bridging the digital divide.

1.5.2 Digital divide

Digital divide, in broad terms, refers to the imbalances between clusters, about access to, the utilizing of, or knowledge of, ICT. It refers to imbalances between individuals and households, as well as countries in terms of access to computers and the internet. "It relates to the gap amongst those who can read and take advantage of the treasure of information that is broadly obtainable, and those who are completely illiterate and can't take advantage of effortlessly accessible information equipment" (Kraynak, 2007:26). For the purpose of this study, digital divide refers to access to computers and the internet in public libraries.

1.5.3 Public library

 "A public library is a collection of information resources that are accessible to the public and that is sponsored from public sources (such as tax money) and

functioned by public servants" (Rubin, 2010:64). The LIS transformation Charter (2014) borrowed the definition of the public library from the IFLA public Library Manifesto (2015) as:

> "The local gateway to knowledge, that provides a condition for basic lifelong learning, independent decision making and cultural development of individual and social group; as a living force for education, culture and information; and as an essential agent for the fostering of peace and spiritual welfare through the minds of men and women"

Features shared by public libraries include the reality that they are sponsored by taxes (usually local, through any level of government that can or may donate); they are managed by a board to serve people's concerns; they are open for everybody, and every member in the community can access the collection; they are fully voluntary in the sense that no one is compelled to utilize the service delivered; and they provide standardized services for free of charge. In this study, reference is made to public libraries affiliated to Ngaka Modiri Molema District in the North- West Province, South Africa.

1.6. Conclusion and summary of chapters

Chapter One covers the background to the study, the problem statement, purpose of the study; significance and delineation of the study are presented. This is aimed at outlining the context of the study to be conducted.

Chapter Two covers the literature review of the study, thus includes the following: theoretical framework, development of the concept "digital divide", causes of the digital divide, measuring the digital divide, ICT and social inclusion, the internet usage and policy implications in the digital age, effectiveness of computers in the digital age, problems of digital library development, roles of libraries in bridging the digital divide, and the impact of public access to computers in public libraries.

Chapter Three covers the research methodology of the study, thus includes the following: the research design, types of research, the area of the study, population and sampling, data collection method, data collection procedure, pilot study and ethical considerations.

Chapter Four covers the data analysis and interpretation of the study, and includes analysis of a questionnaire, and data interpretation.

Chapter Five covers the major findings, recommendations and conclusions of the study. The following are also covered in this chapter: restating the aim of the study, the major findings of the study, recommendations of the study, further recommendations, and limitation of the study.

CHAPTER TWO

LITERARURE REVIEW

2.1 Introduction

Chapter one has provided background information and the general introduction to the study by defining the research problem this study is planned to address, delineation and the scope, as well as explaining its significance and defining concepts that frequently appear in this study. Chapter two surveys the relevant literature fundamental to this study. According to Leedy (2001:25), "literature review is defined as to look again at the literature." Literature review entails the reports of what other researchers have completed in similar disciplines: disciplines not similar with but related to one's discipline of the study. The role of the literature review is to find out what other researchers say about the particular topic, and in this case about the role that libraries play in bridging the digital divide, from the perspectives of the users. Literature review also helps in identifying other approaches that will be introduced in order to close the gaps on the previous studies. So far the topic on the role played by public libraries in bridging the digital divide has been extensively researched nationally and internationally using various methodologies and frameworks.

The literature review of this study begins with the theoretical background or framework on which this study is based, namely the Wilson's (1981a; 1981b; 1996) information seeking behavior models. These models are chosen because they identify causes of failure, barriers and intervening variables as some of the problems which people encounter in their quest for information. These problems are closely related to the phenomenon of "digital divide". The same chapter is also focusing attention into the nature and development of the concept "digital divide" as well as its measurement. As the nature of, development and measurement of digital divide are discussed in this chapter; an attempt is at the same time made to show how the area of study, that is, Ngaka Modiri Molema District is associated to concept of digital divide as

discussed. This is followed by a discussion on causes of digital divide, which mainly are comprised of demographic characteristics of communities, followed by the benefits that usage of computers and the internet have on the life of the communities, more particularly in the information age. After having provided a detailed account of the benefits of computers on the life of people in the information age, this chapter also focuses attention on the role of libraries in providing access to the computers and the internet, followed by a detailed account of studies that have been conducted on the topic from the perspectives of the users.

2.2 Theoretical framework

Several studies on information-seeking behaviour of users have been conducted (Wilson 1981, 1996, 1999; Ellis, 1989; Taylor, 1962; Kuhlthau, 1991). These studies have resulted in various Information Seeking Behaviour Models. Wilson (1999) discusses information-seeking models as a structure for taking into consideration the problems, and may develop into a proclamation of the interactions among theoretical propositions. "Lots of models in a broader field of information behaviour are proclamations, often in the form of illustrations that attempt to define an information-seeking action, the foundations and consequences of that action, or the relations among stages in information-seeking behaviour" (Wilson 1999:251).

This study is based on Wilson's first (1981a), second (19981b) and third (1996) information-seeking behaviour models of 1998, 1996 and 1999 respectively. According to Wilson (1999:21) information-seeking behaviour is a field in information science (studies) which is concerned with the determination of users' information needs, the determination of users' information searching behaviour and the determination of the users' subsequent use of information. It is also about how people pursue and utilize information, the methods they utilize to retrieve information, as well as the aspects that inspire information usage (Wilson, 1999:22). The main reason for choosing Wilson's models is because as users seek information from a variety of information resources, always there are some challenges that they

encounter. These models (Wilson 1981a; Wilson 1981b and Wilson 1996) emphasise that as people seek information there are prospects of failure, barriers and intervening variables respectively. These failures, barriers and intervening variables emanate from or may be linked to the phenomenon of digital divide (Wilson 1999:251).

2.2.1. Wilson's (1981a) model

Wilson's first model of 1981 (Figure 2.1) posits that information seeking-behaviour arises as a consequence of the information need perceived by the user. The origin of the process of information-seeking behaviour is the perception for information requisite. An information need can be defined as a person's desire to obtain information from either formal or informal channels of communication. This information-seeking process results in either success or failure to discover pertinent information. If the information-seeking process is efficacious, the individual will utilize the information to satisfy their needs. If they are not successful, the individual may have to reiterate the search process.

Failure to access information can be caused by the fact that some users, especially those in the rural areas, do not have access to proper and well-structured information services such as public libraries with proper ICT infrastructure. Therefore, due to digital disparities such as the absence of skills to utilize computers by the users, the internet disconnection in the public libraries and not enough computers, other users fail to find the relevant information. Failure to locate the desired information can also be caused by dependence on informal channels that are not structured.

If the individual is successful in finding information, he or she then utilize the information initiative, and may either entirely or somewhat satisfy the professed need or, indeed, fail to placate the need and have to recap the search process. The search process refers to referring back through relevant information search processes, which include users identifying their information needs, developing the information-seeking behaviour, searching from the

library databases or through information resources such as library books. The users will use the information accordingly, and as a result, he or she can either fail or succeed in retrieving the desired information.
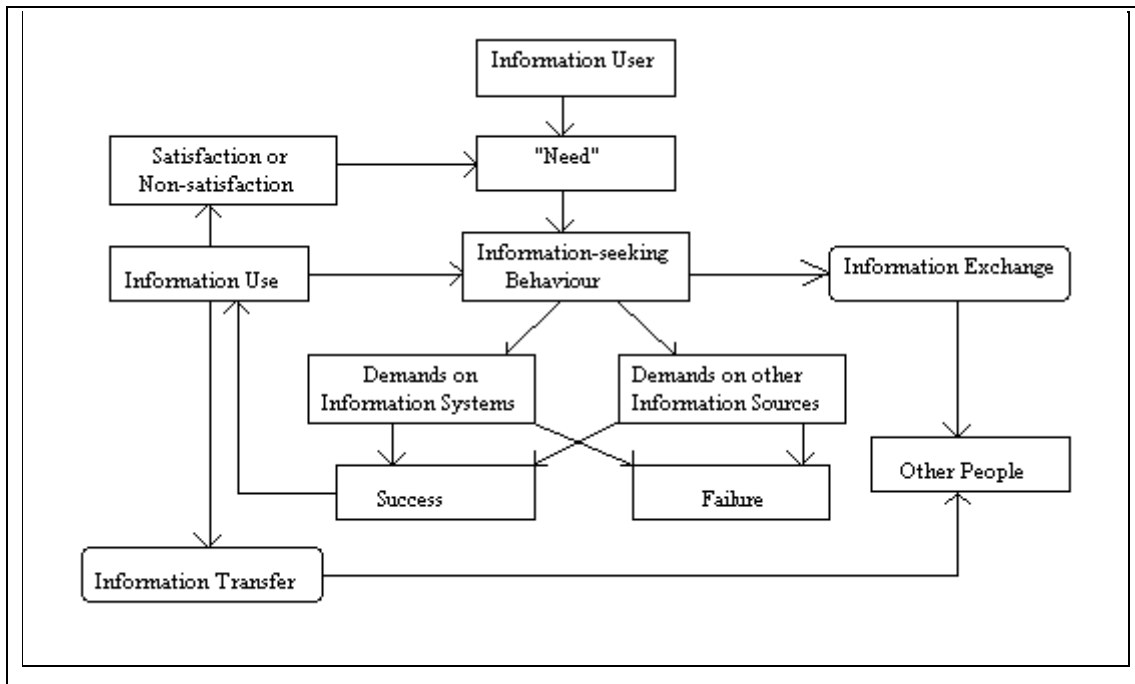
Figure 2.1 Wilson's 1981[a] model of information behaviour (Wilson, 1999:250)

The model, therefore, recommends that information-seeking behaviour occurs as a result of a requisite professed by an information consumer. In this study, the information users may refer to library users in the district, who, in order to satisfy their needs, turn to public libraries. The public librarians have to compose their information need upon prescribed or informal information facilities, by ensuring that there is a proper information exchange from the library databases and other resources. "The model also illustrates that the information seeking behaviour may engage the public through information interchange and that the same information regarded as useful may be transferred to other people, and also being utilized (or instead of being used) by the individual himself or herself" (Wilson 1999:251).

2.2.2. Wilson's (1981b) model

Wilson's second model of 1981 (Figure 2.2) relates two foremost suggestions: first, that information requisite is not a principal need, but a common need that derives from the needs of a very simple kind. The basic needs that give rise to information needs can be defined as physiological needs such as water, food, shelter and sentimental, which is also known as psychosomatic or responsive need such as domination, love, accomplishment etc. Basic needs also include mental needs such as the need for strategy, the need to acquire a skill, etc. The second proposition posits that in the exertion to notice information to gratify a need, the demander is likely to come across different challenges. The barriers that the enquirer encounters when searching for information include the political, economic, social and infrastructural/ technological environments in which the enquirer finds him/herself in.
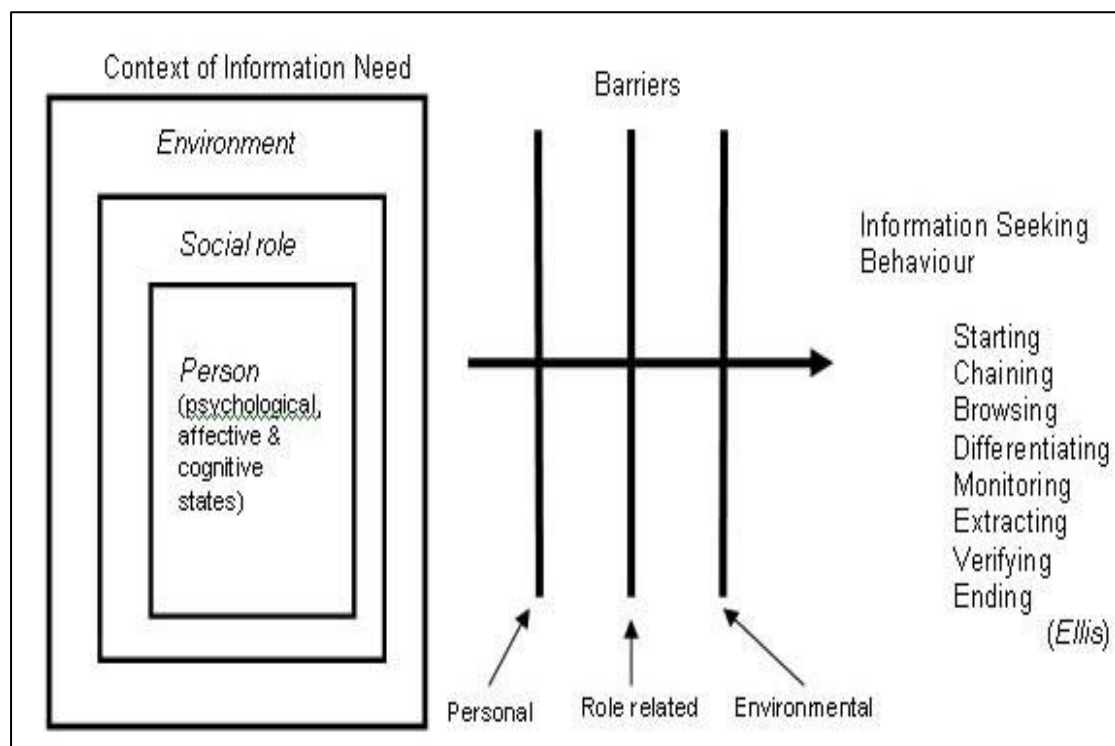
Figure 2.2 Wilson's 1981[b] model of information-seeking behaviour (Wilson, 1999:251)

Drawing upon definitions in psychology, Wilson (1981) notes that "the context of any one of these needs may be the person him- or herself, or the role demands of the person's work or life, or the environments (political, economic, technological, etc.) within which that life or work takes place." Political issues refer to those who have more access to computers and the internet than others. The criteria used by government to decide where public libraries should be built play a crucial role in this part. There are rural areas that do not have public libraries. These are the deserving communities. But the question is why do they not have public libraries? Because of this the digital divide will keep on widening.

Political influence also refers to the people in the communities who decide on building public libraries and information centres for the communities in the rural communities for access to information for free of charge. It also refers to the fact that some information may not be accessed through the internet because it is classified or banned due to its political influence. These can be exemplified by articles or publications that promote racism. Economic influence refers to the affordability of the users to access ICT resources. Due to poverty, certain groups of people in the communities do not afford to buy computers and the internet for themselves, and instead rely on public libraries to access information.

Technological influence refers to the availability of ICT infrastructure especially to the communities without access. Therefore, many people rely on public libraries to gain access to ICT as a means to bridge the digital divide. It is suggested that "the barriers that impede the search for information will arise out of the same set of contexts" (Wilson 1999:252). Barriers in this case refer to the users' lack of skills to utilize library computers and the internet. They also refer to the internet which is often disconnected in public libraries, no enough computers in the public libraries and library computer rooms often closed and these barriers contribute to the digital divide. Should public libraries in South Africa eradicate the above mentioned barriers, then they will play a crucial role in bridging the digital divide.

Wilson's (1981) model is evidently what may be defined as a macro-model or a model of the unrefined information-seeking behaviour, and it proposes how information needs prevail, and what may avert (and, by insinuation, support) the authentic quest for information. Information needs arise the moment the users realise their information gap in their lives, and then follow the relevant steps to acquire the information in public libraries to address the identified information gap. As they attempt to locate information to address their information gaps, users encounter certain barriers; hence, public libraries provide free access to information to address the digital divide in the communities.

These barriers refer to the aspects that results in the discernment of obstacles refer to the challenges that the users experience when accessing ICTs. Many users in the rural areas lack skills to use computers and the internet, and there is no access to computers and the internet in some communities, except for the access that is provided by public libraries. As a result, public libraries are indeed playing a crucial role in bridging the digital divide.

2.2.3. Wilson's (1996) Model

Wilson's (1996) model (Figure 2.3) is a major revision of that of 1981, drawing upon research from a variety of fields other than information science, including decision making, psychology, innovation, health communication and consumer research. In this model causes of failure to access information and barriers in 1981a and 1981b respectively, are represented by "intervening variables". The intervening variables identified are psychological, demographic, role-related or interpersonal, environmental and source characteristics (Wilson 1996).
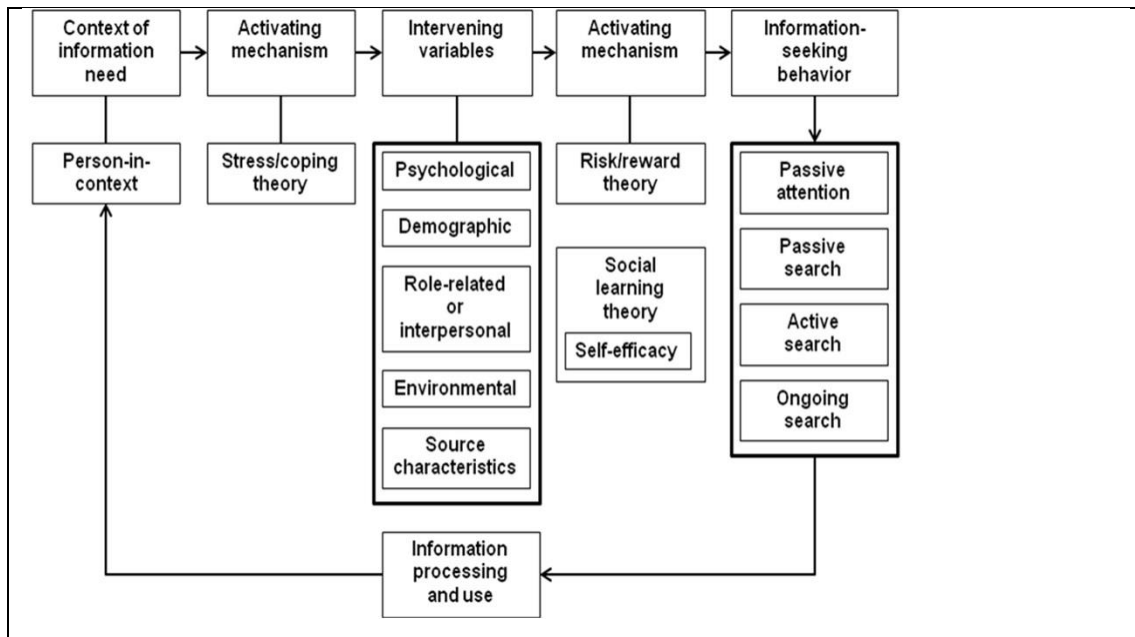
Figure 2.3 Wilson's 1996 information seeking model (Wilson 1996).

Niedzwiedzka (2003) elaborates on these variables as follows:-.

- Psychological variables: This refers to the outlook of life and system of values, political orientation, knowledge, style of learning, emotional variables, and attitude towards innovation, stereotypes, preferences and other traits of an individual information seeker. According Wilson (1997: 557) this means that certain characteristics of an individual information user could act as enablers or barriers to access information during the information seeking process.

- Demographic variables: These include variables such as sex, age, social, and economic status, education, job experience. Access to information might be difficult to accomplish because of the demographic characteristics of information seeker.

- Interpersonal variables: The role a person plays places an individual in a particular place in the social system and in an organisation, which create certain opportunities and barriers to access information. Interpersonal variables encompass job character, job requirements, job position, and level of responsibility. This means that people with certain positions and levels of responsibilities in work or community situations can have access to information than other people at certain levels and

positions occupied. Wilson (1997: 559 -560) cautions that problems are also likely to occur whenever the information source is a person or in a situation where interpersonal interaction is needed to gain access to information.

- Environmental variables: These can be analysed in a country to include legislation, economic level, level of stabilization, information culture etc. This means that the wider the environment can also present problems for one to access information. For example, the country may promulgate legislations which prohibit people from accessing certain pieces of information due to national security and governance concerns.

- Source characteristic: This is about the format and availability of sources from which information seeker may obtain information. The lack of an easily accessible information source may inhabit information seeking altogether or may impose higher costs than the enquirer is prepared to pay (Wilson 1997: 561).

All these intervening variables determine whether they support or hinder information behaviour. Therefore, when investigating about the concept digital divide; these variables should always be taken into consideration. It is also important to show how the people in Ngaka Modiri Molema district are affected by these psychological, demographic interpersonal, environmental, and source characteristics in order to gain access to information though computers and the internet, which will be done in the forthcoming subsections of this research report.

2.3 Development and the nature of the concept "digital divide"

Ever since its inception, digital divide as a concept has become a topical issue of concern in several research articles, conferences and seminars, and as a result has many definitions and descriptions. The fact that Mwinm and Kritzinger (2016) were able to conduct a study into the existing literature on digital divide according to the views of different authors, shows that the concept "digital divide" has been widely discussed and intensively researched,

and thus providing various understandings and different views of the concept. This study (Mwim and Kritzinger 2016) also shows how several authors view digital divide in terms of information and devices, skills and literacy, geographical view, content, age and gender, occupation, culture and language, as well as attitude. Over and above, some organizations have also gone to the extent of creating websites to deal with digital divide (Lor 2003: 62).

There are some organizations that also made an attempt to come up with the definition of the concept "digital divide". The Organization of Economic Cooperation and Development (OECD) define digital divide as "the gap between individuals, households, business and geographic areas at different socio-economic levels with regard to both their opportunities to access ICT and their use of the internet for a wide variety of activities" (OECD 2001: 5). According to Dragulanescu (2002: 139), the concept digital divide is said to have been coined by a former United States Secretary for Commerce and Telecommunication and Communications, *Larry Irving Jr* to focus attention on the "existing gap in access to information services between those who can afford to purchase the computer hardware and software necessary to participate in the global information Network, and low-income families and communities that cannot". Furthermore, Liu (2001) notes that "the impression of a digital divide that differentiates the information "haves" from "have nots" was presented and announced by the National Telecommunication and Information Administration (NTIA) of the United States Department of Commerce (USDC) in numerous formal documents authorized through the internet". These documents, released from 1995-2000, expand the notion of worldwide services from telephone service to computer and the internet access. The NTIA documents and many other contemporary pragmatic studies establish extensive inequalities in computer and the internet access, and literally several demographic lines, including race, education, income and geographic region.

The American Library Association's (ALA) office for Information Technology and Policy also define digital divide as "differences due to geography, race, economic status, gender and physical ability in access to information through

the internet and other information technologies and services, as well as the skills, knowledge and abilities to use information, the internet and other technologies" (Lor 2003: 63). As one looks into these definitions by different organizations, one realizes that they have something to do with inequality in terms of access to ICT's due to demographic factors such as age, gender, education, sills, race, income level, location, language culture and other variables that may determine an individual's opportunity to access the ICT's.

Several researchers have also made some attempts to define this concept. According to Salanje (2008:5), "the term digital divide is used to describe the discrepancy between people who have access to and the resources to use new information and communication tools, such as the internet, and people who do not have the resources and access to the technology." The concept also entails to the inconsistency among persons who have the expertise, wisdom and capabilities to utilize the technologies. It also denotes those who do not have any of these skills. The digital divide may occur amongst persons living in rural and urban areas, between the educated and uneducated due to economic groups, and also on a universal scale between more and less technologically developed countries. In the historical ten years or more, telecommunication resources have enhanced the role of computers and the internet in bridging the digital divide. Malawi has perceived the overview of cellular phones, a rise in the quantity of telephone lines, radio stations, the internet cafés and the internet service suppliers.

According to Anon (2002:3), some people have the most powerful computers, the best telephone service and the fastest internet service, as well as a wealth of content and training relevant to their lives. Another group of people does not have access to the newest and best computers; the most reliable telephone service or the fastest or most convenient internet services. The difference between these two -groups is the digital divide.

The constricted description of the term "digital divide" also refers to the absence of access to computers between ethnic clusters. According to Rao (2000:4), "the comprehensive description comprises adequate training and pertinent content of the information through public libraries on the website that

will allow various age clusters, masculinity and culture groups to utilize technology appropriately". At the end of the scale, the digital divide is described as the reproduction of a more intricate problem that echoes worldwide illiteracy, health, poverty and additional socio-economic and political issues (Bertot, 2009:187). Therefore, addressing this problem goes far beyond only offering access and training, but to confirm also that there is perpetual delivery of ICTs resources to the rural communities via public libraries. Bridging the digital divide will consequently embrace a sophisticated review of policies such as education, income circulation and health and the establishment of computers and the internet services to the rural communities for free of charge in the public libraries (Rao, 2000:190).

Other arguments by Bertot and McClure (2007:20) claim that the gap signifies a lost prospect, where the underprivileged are incapable of taking advantage of technology and thus continue living in a brutal cycle of poverty. According to Rao (2000), "to be able to get to grips with the digital divide, the term needs to first be problematized. As suggested, the last decade has seen a shift from the notion of an information gap to that of a digital divide. The word "divide" suggests a significant barrier, one on a massive scale and hard to shift, as in "continental divide" or "great divide". What started as a "gap" seems to have become larger. The word "digital", on the other hand, appears to narrow the gap down to a technological problem.

Based on the causes of the digital divide from different countries, studies have been conducted to investigate what causes the digital divide and the impact and effects of the digital divide in the development of people through access to ICT in the libraries in all sectors. This refers to the studies of Hubrgtse (2005), Weiss (2012), Panda, Chhatar and Maharana (2013), Al- Jaradat, Al-Dwari and Obeidat (2014), Munster (2005), Bishops, Tidle, Shoemaker and Salela (1999), and Gomez and Gould (2010).

Hubregtse (2005) attempts to define the digital divide and examine the significant differences in, and implications of, the extent of the internet connectivity both globally and, more specifically, within the European Union (EU). The study was premeditated utilizing and linking impartial data and

literature, adding the writer's individual understandings and thoughts. According Hubregtse (2005), "after 1 May 2004, when the EU was enlarged from 15 to 25 member states, the digital divide in the EU widened substantially (national connectivity varying from less than 10 to more than 60 percent), caused by regional lack of technological infrastructure as well as cultural and psychological factors."

Very current nationwide data on the internet-connection are two years old. The disparity in the internet-connection in the EU will rise intensely, with all the results of communication, and distribution of information, and economy. Subsequently, equivalent to digital media, old-style means of distribution of information such as books, public libraries; local distribution is upheld and advanced (Hubregtse, 2005:35).

According to Weiss (2012:25), "the digital divide refers to the gap that exists between individuals and groups who have access to modern information and communication technologies - particularly the internet - and those who do not." The information "have-nots" excessively fit to low-income families, are associated with the marginal clusters, are elders, and staying in rural as opposite to urban zones. As it is imagined, in a progressively digital ecosphere, inequalities in access to dynamic technological infrastructure contribute meaningfully to poverty and disparity. This paper examines the degree and the insinuations of the digital divide in the United States, and it checks the community and private determinations to address the issues from the 1990s till today. Expressively, the present management has located the main importance of the advancement of the national technological resources, a strategy that comprises the production of high-speed internet access worldwide. This study therefore changes its emphasis to the part that libraries play in closing the digital divide. This study then concludes with certain explanations regarding the present problem of librarians who have to meet growing prospects and increase communal accountabilities with few facilities.

According to Panda, Chhatar and Maharana (2013), "the phrase digital divide has been applied to the gap that exists in most countries between those with ready access to the tools of information and communication technology and

the knowledge that they provide access to and those without such access and skills." The additional disparity amongst the industrialized and below industrialized ecosphere in the acceptance of technology that is palpable within the universal society. The significance of these approaches in industrialized countries and the approaches for eradicating the universal digital divide are expanding. Libraries have been crucial representatives in nurturing harmony and social morals. Libraries are now functioning technologically, and their technological services introduce a new channel to the world of knowledge and information in terms of linking cultures across the universe. The concept of digital discernment predominant between numerous political, social and working clusters has led to the appearance of digital information-rich and digital information-poor clusters within communities and in the universal environment.

2.4. Dimensions of digital divide

The technological measurement of the digital divide is accentuated in much of the literature and in most deliberations of the digital divide. According to Sorj (2000:44) addressing the concept of connected, disconnected and the digital divide state that in modern societies, the terms "connected" and "disconnected" refer to the unequal access to a diverse collection of communication tools such as books, periodicals, radio, telephone, television, and the internet. Although the focus is on access to and uses of the internet, the digital divide cannot be disassociated from access to other communication and information technologies. James (2005:115) indicates that there is a strong correlation between the digital divide and other forms of social inequality. Generally, the highest levels of digital exclusion are found in the lowest income sectors. In modern societies based on mass consumption, social inequality in terms of communication does not manifest itself solely only on the basis of access to material goods such as radio, telephone, television, and internet. The intellectual and professional capacity of each user to make the most of each of these communication and information technologies is as important as access itself.

In this case issues of hardware; technical infrastructure and connectivity emerge big. The "eight Cs of accomplishment in the internet economy" articulated by Rao (2000) and Lor (2003) offer an arrangement that is sturdily positioned to technological and economic proportions. Oladokum (2010) discusses the dimensions as follows:-

2.4.1. Connectivity

Connectivity refers not just the telecommunications facilities and teledensity but also the readiness of advanced resources, marginal apparatus and software but also a good computer situation, free from extreme heat, dust and moisture. Connectivity is not suitable only to an urban population but also to the rural and disadvantaged population. The connectivity in this instance refers to access to ICT infrastructure in both the urban and rural communities. Unlike people from the urban areas, the rural communities have no access to access to any ICT connectivity mainly because of the disparities they found themselves in e.g. poverty and illiteracy. Therefore, it is through the public libraries that even people in the rural areas who are surrounded by the disparities to have equal access to the ICT connectivity. This indicates how much the public libraries can play a paramount role to bridge the digital divide.

The researcher 's preliminary observation showed that many public libraries in Ngaka Modiri Molema Districts have internet connectivity, especially the libraries such as the Mmabatho Public Library, Barolong Public Library, Danville Public Library, etc. This kind of connectivity in the Ngaka Modiri Molema District assumes to be helping a lot in bridging the digital divide in the rural communities of Ngaka Modiri Molema District.

2.4.2. Capacity

Capacity refers to appropriately trained IT experts to connect and preserve hardware, software and networks that are needed. This also refers to professional information personnel, who are able to construe, offer insight, persuade and train users, and it also refers to education and professional associations of IT and library/information professionals. Capacity also refers to the proficient interaction and inclination to collaborate with library stakeholders. Therefore in order for the public libraries to bridge the digital disparities in the rural communities the public libraries should then ensure that they are well capacitated. They should ensure that they install the best IT infrastructure in the public libraries. This will ensure that lack of disconnection in the public libraries is a thing of the past.

Therefore the community will receive access to ICT the whole day, unless due to technical problems those are beyond the technicians. Public libraries should ensure the public librarians they appoint receive proper training so that they become able to answer ICT related queries raised by the users. This kind of capacity will ensure that the public libraries in the rural areas provide accurate and current information to members of the community and that's will help in bridging the digital divide.

Even though the issue of capacity in the Ngaka Modiri Molema district is not satisfactory in terms of ensuring that internet connectivity is reliable, public libraries are capacitated with enough computers, and the public librarians responsible for those computers are well trained but at least the provision of access alone and the help the librarians provide ensure progress in the fight against access imbalances in the rural communities of Ngaka Modiri Molema District.

2.4.3. Content

Content refers not only from advanced nations but also from societies and the nation itself, in dialect languages (mother tongues) appropriate to nationwide

indigenous issues and trepidations which are as follows: superiority of content, local calendars, portals, databases and marketing income. Public librarians as members of the communities will therefore use the local languages when providing the library ICT services to the users, training and assisting the users with computer activities. Since language can also cause the digital divide, public librarians can bridge the digital divide by using appropriate languages when addressing computer and the internet queries.

According to Singh (2009:31), "the motive why people do not utilize the internet and correlated technological resources is because they have the perception that the content is not pertinent and fascinating to their ways of living". This is applicable to certain groups of people such as the elderly and the racial clusters. People are inclined not to utilize the internet in dissimilar societies because they believe that the type of information accessed on the internet is not trustworthy and fascinating to their ways of living, and as a result, this generates a gap in terms of access to the internet and computers in such societies. Public libraries should educate all groups in communities (youth, elders and racial groups) that there is always appropriate and relevant information for everyone. Depending on the searching skills, public libraries should capacitate the community with the search skills. Public libraries in Ngaka Modiri Molema provide the library and information services including the computer and internet services using the local languages that used in the communities.

2.4.4. Community

According to Oladokum (2010:101) community refers to customers and probable customers; for customer base rests on literateness and the level of education of library users. It also refers to access to properties for faction groups and disadvantaged clusters, including rural societies, children, the elderly, women, and persons with disabilities, the jobless group, the rural and poor groups. This means that everybody in the community will have fair and equal access to ICT in public libraries. If people have equal access to ICT

through the public libraries then that will prove the fact that public libraries play a crucial role in bridging the digital divide.

Public libraries in Ngaka Modiri Molema provide the computers and the internet services to all the members of the community. Members of the community in Ngaka Modiri Molema refer to the elders, university students, learners, the employed community members and the unemployed members of the community. Everybody in the Ngaka Modiri Molema District have equal access to the library computers and internet.

2.4.5. Capital

This refers to capital that can be used to venture in infrastructure and resources and the execution thereafter in the public libraries. On-going revenue for maintenance of ICT systems in the public libraries and developments: preservation, advancement of systems, permit fees, workers, government, the private sector and NGOs should sponsor public libraries with proper working computers so that they will be able to provide unlimited provision of the internet to the rural communities. This refers to the conditional funds that are provided by government to the public libraries so that they can play an important role in bridging the digital divide. These funds are used to capacitate the public libraries with computers and connectivity and also appoint more qualified librarians to perform the library duties that can help bridge the digital divide.

Public libraries in Ngaka Modiri Molema District are funded by the department via the conditional grants, the funds they use to capacitate the libraries with ICT infrastructure. ICT in the Ngaka Modiri Molema are also sponsored by Bill Gates Foundation.

2.4.6. Culture

This comprises government assertiveness to provide the citizens with access to telecommunications that refers to the internet cognizance for decision makers (refers to municipalities and Department of Sport, Art and Culture who decide where and when to build public libraries and also decide on whether those libraries are connected) and administrators (refers to the public librarians who their duties is to ensure that equal access to ICT in the public libraries is given at all times). Therefore, all the stakeholders should via public libraries and their services adopt the culture of providing the rural communities with access to proper computers and the internet services so that the digital disparities experienced by people especially in the rural communities are well addressed.

Culture may also refer to the culture of people who are supposed to receive the internet services. The issue of culture revolves the fact that it might sound cultural that male are more into technology that females as a results of how they are taught in the cultural education programmes. There are cultures that restrict certain group of people to do certain things simple because they are viewed to more on the white people's culture. People, particularly the black people get surprised when they see their black counterpart do things perceived to be white people things e.g. writing and using the internet. The usage of computers and internet is assumed to be more of the white people culture than the black people as discussed by Bently (1998: 145).

2.4.7. Cooperation

This refers to the working together amongst government, the private sector, academia, and civic communities, etc. that takes place locally, nationwide and in the region in ensuring that the public libraries have the best possible ICT resources that address the digital divide and also the public libraries serve the purpose they are meant to serve. All sectors in the country should ensure that

public libraries have proper computers and the internet so that the community will have access to the internet services. This cooperation will therefore make it possible for all the public libraries especially within the Ngaka Modiri Molema District to play their important role in bridging the digital divide. This cooperation refers to government and private sectors providing necessary funds to procure proper ICT resources, qualified and well trained librarians will also provide their expertise in providing services through library computers that bridge the digital disparities taking place in some rural areas.

Therefore, it seems like there is this kind of cooperation in Ngaka Modiri Molema District between private companies, universities and government in ensuring that the public libraries are capacitated with proper ICT infrastructure so that the public library play a crucial role in bridging the digital divide. It seems there are computers that were donated from different companies in some of the public libraries in Ngaka Modiri Molema District.

2.4.8. Attitude

Theoretically, the attitude of a patron towards a system is a main factor of whether they will essentially utilize or discard the system (Davis, 1986:23). The attitude of the patron is also considered to be prejudiced by two main beliefs: "professed usefulness" and "professed ease of utilization" of the system, with the latter having a straight effect on the former. This results in traditional and interactive attitudes towards technology.

> Some societies are convinced that computers are for "intelligent" individuals, for males, for young people, and are problematic to be utilized or fit very well to the middle cluster and also to the "white" groups (Mutula, 2004:231).

People in rural communities as well as in Ngaka Modiri Molema District do not use computers because they believe that they (computers) are for people in the cities and or urban areas, and as such, the digital divide widens because of their attitudes towards technology. Public libraries should encourage and

educate people in the communities that computers are for everyone so that the perception that computers belong to certain people is eradicated.

2.5   Measuring the digital divide

In the past few years, a large number of studies (Melissa, 2014; Weiss, 2012, Obeitdat, 2015, Shuva and Akhter, 2011, Chowdhury, 2013) have scrutinized the usage of information technology universally, specifically computers and the internet in the information centres and public libraries. These studies use numerous procedures, and arrive at different assumptions. However, they agree on two essential opinions that normally, telephone technology is near complete and ubiquitous coverage, while the usage of computers and the internet is in its initial phases but developing quickly (Chowdhury, 2013:69).The usage of computers and the internet rises quickly because the facility of free access to computers and the internet is prioritized through public libraries, and as a result, public libraries play a crucial role in bridging the digital divide.

The National Telecommunications and Information Agency (NTIA) has delivered a sequence of reports that utilize the Current Population Survey (CPS) data to inspect the inquiries of computer and the internet access, usage and data collection, depending on diversified samples that are not directly similar to the NTIA research reports. However, they are valuable for comprehending different features of the internet connection and usage. Noticeably, an essential circumstance for utilizing the internet and other software applications is via access to computers that are offered by public libraries in a way that bridges the digital divide (Redman and Morry, 2009:54).

According to Raseroka (2004:87),

> NTIA data show that ownership of a computer is very likely to lead to the internet use. In 1997, only about half of computer-owning households were connected to the internet. By 2000, more than 80% of those

households were connected, while 15% more households had a computer.

This means the difference among the households owning computers and having the internet connections is around ten percentages. "The NTIA data also show that the proportion of households with an the internet connection has more than doubled in three years from 18.6% of all households in 1997 to 41.5% in 2000" (Raseroka, 2004:87).

According to Raseroka (2004), "household with the internet connection are more than doubled for every income group below $50,000 from 1997 to 2000, but fewer than 20% of households with incomes below $20,000 have an the internet connection." The internet household connectivity has at least multiplied since 1997 for every ethnic group in the NTIA data. Actually, all ethnic clusters have connection rates advanced more than white connection rates were in 1997. Over one-fourth of ancient households have the internet connections; which is approximately three times the rate in 1997. "NTIA has data on separate the internet connections as it does a summer 2000 survey by the Pew The internet and American Life Project" (Rubin, 2010:89).

Nonetheless, it is uncommon for individuals particularly in the rural zones to have computers of their own with the internet connection, but they rely in public libraries to use computers and the internet. This proves that public libraries are capable of bridging the digital divide.

Connections are higher for individuals with higher incomes, higher for white people, and also for those who are highly educated. The connection rate for people in the communities is somewhat higher to the connection rate of households due to the fact that certain individuals have connections at their school, work, or in public libraries, but they have no connection at home. However, the internet connection rates have extremely increased particularly those linked with the acceptance of other communications technological resources. For example, in 1991 forty years after the first overview of cable, 58% of television households got connected to basic cable service. By 1999, that had improved to 67%, a development rate of about 1% of households per

year from 1991. Telephone service took time to spread to a majority of households to subscribe to it. In 1920, more than 40 years after the overview of the telephone, only 30% of American households had telephone service. By 1983, this had increased to more than 90% of households. Since then, telephone penetration has increased about 3% (Salinas, 2003:67).

Public libraries ensure that the internet connection is also extended to those who are not educated, those without income and is also given to all racial groups. The contrasts amongst the rural and central city households deliver particular imperative perceptions into the probable causes of differential connection rates, and shed light on the efficiency and suitability of countless policy substitutions. At present, rates for the internet and local telephone service ensure that rural households have the same chances to connect to the internet as inhabitants of both urban areas and central cities locations. This condition is possible to diversify if high-speed access becomes the standard for the internet access. The present technology that can offer high-speed access at many rural areas is satellites channels, even though sometimes the satellite connection will have technical problems and is very expensive. Apart from telephone service, the rural internet service is not supported.

If rural high-speed access is supported, it is significant to comprehend that taxing urban subscribers to fund rural areas will upsurge values in other places. Assuming that central cities have inferior internet subscription rates that are more than those in the rural areas, this cross-subsidization will have the obstinate result of dropping connection rates in the areas where the internet diffusion is lower (Liu, 2001). However, in most places, public libraries can also provide the rural communities with high speed internet connection. However, due to network problems, especially in the rural areas, it will be difficult to do so but public libraries have the capacity to provide high speed internet access through satellite devices.

Studies across the world have been conducted to measure the impact of the digital divide as a role of public libraries throughout the world (Russell and Huang, 2006); Salanje, 2008).

Russell and Huang's (2006) found that the students who are in position of the degrees access computers and the internet, and explores the relationship between technology accessibility and academic achievement. The study used questionnaires with more emphasize on fifth-grade learners in the Oklahoma City metropolitan area. This is due to the state-mandated test effects for main topics that are accessible at the Department of Education website. Consequently, it permits the researchers to amass data on both technology availability and accessibility and academic accomplishment. This shows how ICT infrastructure plays a significant role in bridging the digital divide.

The conclusions indicate that the digital divide still exists, cutting through numerous socio-economic aspects, and that the association of the technology availability and accessibility and academic accomplishment also exist, even though it is complex by some compounding aspects, such as the learning subject, the technological usage, and the socio-economic circumstances. It is expected that the results of this study assist policy makers, school management and teachers to better comprehend the subjects of digital divide and the significance of technology usage in schools. This research addresses the issue of the digital divide in the public or rural school system, and examines how it disturbs learners' academic accomplishment (Russell and Huang, 2006).

According to Salanje (2008), "SchoolNet Malawi currently has 50 participating schools." The purpose of SchoolNet Malawi is to provide Malawian children, at both the primary and secondary schools, with a chance to study about new technological resources in the field of ICT in order to contest in the universal knowledge based economy. With regard to the Ministry of Education's policy of justifiable access to education prospects, SchoolNet Malawi offers and simplifies ICT expansion in the schools in the communities. Subsequent to its formation in 1999, SchoolNet Malawi has disseminated over 832 computers to 50 partaking schools in the communities.

However, the nation has come up with policies and procedures, amongst which are for ICT for Development (ICT4D) Policy and The National Policy on

Library, Documentation, and Information Services (NPLDIS). The improvement of such policies and procedures offer comprehensive strategies from which action programmes and services can be established to expedite evocative participation of the national information infrastructure in the state's vision, strategic planning and development. One of the main accomplishments is the formation of the Malawi Library Information Consortium (MALICO), whose foremost role is to develop access to electronic information.

Information professionals train various groups of people on how to utilize computers and how to retrieve electronic information utilizing the internet. So far, certain female parliamentarians, young female managers, journalists and lawyers have received the training. Beginning steadily, information professionals train their patrons to search and access eminence and pertinent electronic information. Mother and Child Project is a project whose objectives are to motivate mothers to read and have storytelling moments with their children. This project has introduced computer games and programmes so that children are invigorated to learn how to utilize computers in a premature period.

Baobab Project National Library Services is taking part in an activity of providing less expensive ICT services in its ten branch libraries dispersed all over the state via the 'Baobab project'. In this project, NLS would acquire at least two low cost computers (costing about US$160 per computer) running on low power (110amps) for each branch library. These computers are to run on solar panels or wind turbines with a high life battery. Most of the NLS branch libraries are in rural areas with no electricity (Salanje, 2008:14). However, this project empowers branch libraries to provide certain ICT services to the clients, particularly in rural places. There seems to be a lot of dependency on contributors and associates to sponsor projects whose goal is to bridge the digital disparity.

> Libraries in Malawi are getting finance provision from associates like FAO, Norwegian Agency for Development (NORAD), Book Aid International, World Bank, Department for International Development (DFID), Japanese International Cooperation Agency (JICA) and Swedish International

Development Agency (SIDA) for most of their ICT activities and programmes (Salanje 2008:241).

Many organizations have no finance for the ICT. Malawi has around 20% of its populace aged 5 years and beyond that have never gone to school. Few Malawians who are literate have basic computer expertise. Whatever is available in Malawi are in other languages besides the local ones. Information professionals are supposed to take part in the digitization of Malawiana publications and their creation for retrieval on the internet. The minute digitization efforts delineated are getting productive, the information professionals in Malawi within their own competences and by their cooperation with other stakeholders are doing their best to bridge the digital disparity. However, there is long way to go. "The digital divide in South Africa is extremely pronounced in that only 4.5% of the total population are information haves and 95.5% are information have-nots" (Salanje 2008:241).

The only reason for the poor digital divide in South Africa seems to be the apartheid legacy that endorsed isolated improvement that offered mediocre education and poor or no access to learning prospects for the non-white people population. The actuality of the digital divide is also ascribed to a high level of poverty, lack of telecommunications resources, and expensive the internet connectivity. Even though the digital divide occurs, ladders are being clamped at a macro phase to improve technological midpoints and digital communities in the townships and rural areas. South Africa's voyage to reconcile and reinstate itself from the consequences of apartheid will, however, take epochs. Nonetheless, it is these digital communities that will contribute to therapeutic procedure. The digital divide does not only occur at a macro stage, but has also established itself at micro phases in governments, where individuals are accomplished, well paid, with access to computers and telecommunications resources (Salanje 2008:241).

A review by Sigh (2001) was established at the University of Durban Westville to regulate internet access and the internet usage configurations of staff who tailored the outline of a distinctive the internet user. It was discovered that they were learned, and had access to the internet services. They are also well

paid. "A web-based questionnaire was administered to all the staff using probability sampling. Consequently, the whole populace of 946 who had access to computers and the internet services, and who also had e-mail addresses, was surveyed, since everybody in the populace had a sensible opportunity of being designated into the sample. Any answers would then be effective and generalizable through the inhabitants (Sekaran, 1992). A total of 294 replies were established which epitomized a 31% response rate.

According to Sigh (2001:214) the outcomes indicated that the digital divide occurred at the University of Durban Westville, where merely 67% of academics had access to the internet. Another 33% were ostracized since they were utilizing out-dated 386 PCs that had inadequate or lack access to the internet. Certain academic staff did not have PCs altogether, and the newly appointed staff was not given PCs simply because they were junior. The veterans had PCs and the internet access but did not utilize the resources due to resistance to change and inadequate or no proper training in the usage of computers and the internet. This situation is definitely not vigorous in an academic fraternity, because it also impacts on the eminence of the students the university produces. Computing, which encompassed the usage and access to computers and the internet, was only taught to selected faculties, for example, the Faculty of Commerce, Computer Science, Engineering and Mathematics Studies. The Faculties of Health Sciences, Arts, Education and Public Administration students were not given computer literacy courses, including web surfing.

In 2000, thirty-three (33) postgraduate students were offered information management courses while none of them had ever seen or used a computer. Such circumstances do not look well for a university that bragged about computer laboratories that were claimed to be improved in 2000 to an amount beyond R5 million. It is therefore unacceptable for a university in the information age to promote graduates without basic computing and the internet expertise; worse, promoting graduates of information management without computer and the internet expertise.

South Africa experiences numerous developmental difficulties that make it one of the most difficult societies globally. The republic is separated by ethnic disparity and inconsistencies in the level of expansion amongst various segments. These impediments consequence in discrepancies is in access to computers and the internet services and the discrepancy is normally identified as the digital divide (Baskaran and Muchie, 2006:89).

According to Kaplan (1989:78),

> South Africa started the development of a local telecommunication industry in 1958. Despite a rather successful state policy for some two decades, the old state policies can no longer keep up with new designs of digital equipment. One attempt to liberalize the communications industry itself was to end the monopoly of Telkom and open up the sector market competition.

The establishment of electronic governance by implementing the electronic governmental websites has demonstrated to be a vast challenge to South Africa. According to Kroukamp (2005),

> political leaders are reluctant to bring changes to IT policies that are thought to be unnecessary. In many cases changes are only made to satisfy the needs of the government instead of citizens. In the social context available website might not reach everyone, since people speak different mother tongues.

In the years 2000-2003, there was a progression rate of 59% in the number of schools with computers and the internet, basically in the secondary schools. Notwithstanding the alarming progression rate at the national level, 39% of schools in South Africa have computers and the internet, while 26% utilize computers and the internet for education. It furthermore shows that more than half of schools in South Africa cannot offer the learners with any computer and the internet facilities. Figures have also revealed that there is a blunt regional discrepancy in the developmental rate of computers and the internet facilities in Gauteng, the Northern Cape and the Western Cape higher than all the provinces (Darries, 2003:45).

In both the elementary and secondary schools, basic computer expertise with assistance from the public libraries in the rural societies has been offered. Notwithstanding, the discrepancy in the competences of the learners and teachers in utilizing the computers effectually to assimilate technology in education, however, via the computers and the internet services offers by public libraries the schools can benefit from utilizing the library and information services to bridge the digital divide (Baskaran and Muchie, 2006:101). According statistics published by Baskaran and Muchie (2006:101), by the end of 2009, 10.8% of the entire population in South Africa has access to the internet. Having an average the internet speed of about 1 Mbit/s the country's connection speed is below the 2 Mbit/s broadband international averages. Hence South Africa's low access rate to the internet and below average connection speed make it difficult for the country to compete with other countries in attracting foreign investors (Baskaran and Muchie, 2006:101).

2.6   ICTs and social inclusion

According to Britz and Blignaut (2001), "the links between socio-economic development and ICTs are generally accepted". The United Nations places the global spread of the benefits of ICTs under its eighth Millennium Development Goal "Develop a global partnership for development". The South Africa's National Development Goal suggests that the ICT resources will reinforce a comprehensive and flourishing information society and knowledge economy by the year 2030. It speaks of continuous information resources that will contribute to operative economic and communal contribution. According to the Plan, by the year 2020, South Africa will have 100% broadband infiltration and all schools, health infrastructures and comparable communal organizations ought to be connected, and individuals ought to have affordable access to technological services. "And by 2030 the goal is that all South Africans will be able to use core ICT services and enjoy access to a wide range of entertainment, information and educational services" (Chisenga, 2007:50).

This accomplishment can be completed if government maintains and develops the public libraries proper technological infrastructure and services, and hire qualified public librarians to do the library and information work. Britz and Blignaut (2001: 63) argue that the North-South divide and poverty in general are connected to "information poverty" which they define as:

> A condition of life where the majority of people in a specific context do not possess the skills and abilities to access, interpret and use information effectively for development. As such information poverty can be seen as an instrumental form of poverty affecting all other spheres of life (Britz and Blignaut, 2001:65).

Information deficiency means more than not having physical access to technological facilities. It also refers to the establishment of training as the role of public libraries to guarantee that members of the society have appropriate expertise to utilize computers and the internet facilities. In a report on a study of refugees and migrants in Australia, Lloyd, Lipu and Kennan (2010: 47) talk of "information poor lifestyle" which has three dimensions:

- Inadequate access to resources.
- Limited social networks.
- Inadequate practices and skills to use information to make decisions.

These studies claim that a requirement for partaking, inclusion and informed nationality is the capability to improve knowledge from information. Their study indicates the acquaintances by reviewing how the new pilgrims cope with their new "information landscape" (Kennan, Lloyd, Qayyam and Thompson 2013: 192). The study reveals the pilgrims needed to improve new information practices to discover and utilize information to deal with everyday circumstances. There were three barriers attached to this, namely, lack of education, lack of literacy and lack of English (Kennan, Lloyd, Qayyam and Thompson 2013:208). Facebook was established to be appreciated to particular younger refugees in connecting with old companions in their mother tongues. But generally, the internet was not a valuable source of information because of language and literacy issues (Bertot and McClure, 2007:19).

The report of the American Knight Commission on the Information Needs of Communities as stated Bertot and McClure (2007:20) also highlights the issue of "information poverty". The report begins with the statement, "The need to be no second-class citizens in the democratic communities of the digital age". But it finds that the digital age is not serving all Americans equally. It gives three aspects to the idea of "access" that are close to the Nielsen model which are as follows:

- The availability of relevant and credible information to communities
- The capacity of individuals to engage with information
- Individual engagement with information and the public life of the community.

With regard to ICT and social inclusion, Khati (2013) conducted a research on the role of public libraries in bridging the digital divide in Cape Town. This research project looked at the role of public libraries in bridging the digital divide which is both a symptom and a cause of social exclusion in Cape Town. Public libraries offer free information services to ordinary citizens by means of a wide range of media, including the internet. But they offer more than just access as their information literacy programmes educate people in the use of various media.

Throughout the world, there are numerous creativities engaged by public libraries to aid the bridging of the digital divide. The resolution of the case study of one library district was to examine if and how libraries in Cape Town were taking on this accountability. The study had two portions: a review of one district of the city's libraries, and a closer case study of one designated library in the district. The general discoveries from both stages of the study were that public libraries do assist in narrowing the digital divide by providing free internet access to the public. One of the projects initiated by the public libraries that were surveyed include Masiphumelele library, designated to narrow the digital divide by SmartCape. Masiphumelele did not only have SmartCape, but it also offered free computer literacy courses to its patrons (Khati, 2013).

An ethnographic study conducted by Donner, Gitau and Marsden (2011) on the usage of mobile only the internet amongst a group of women working as seamstresses at an NGO in Khayelitsha in Cape Town highpoints the jeopardies in presumptuous that technology on its own might lessen the information poverty. None of the partakers had utilized the internet before, even though they possessed portable phones with the internet access. In this study, the partakers were granted training to utilize the internet. The training presented a mobile internet as part of everyday living, whereby they could look for job opportunities, current affairs, and entertainment. Six months after the training, most of the partakers opted to utilize the mobile internet for entertainment; but they come across barriers which included affordability and the difficulty of utilizing computers. Tlabela, Roodt, Paterson and Weir-Smith (2007) established a study for the Human Sciences Research Council into public access to technological resources in South Africa. They decided that public libraries have a broader topographical circulation than other venues like versatile community centres or telecentres, and that their community and education orientation might grant them a benefit over others.

2.7 The internet usage and policy implication in the digital age

2.7.1 The internet usage

The manner in which people utilize the internet will have central inferences for any public policy actions that seek to intensify the infiltration of the internet. Many debate that connection to the internet is vivacious to contribution in the digital economy and the democratic dispensation. The University of California, Los Angeles (UCLA) the internet report scrutinizes how individuals utilize the internet, and discover that individuals who have more online knowledge devote more time on online working at home, observing new the internet sites, and making businesses. Individuals with less than a year of knowledge online spend more time playing games and following hobbies. At least two probable interpretations of these data are made (Sigh, 2001:40).

The first is that societies acquire more about the probabilities of the internet time and again and feel more contented with the internet as an instrument as they increase their knowledge. The other interpretation is that several serious internet users signed up for service earlier. If the last interpretation is correct, consequent subscribers will be inclined to be fewer commercially oriented in their internet usage. The data illustrated in the study offer no basis to differentiating amongst the two different interpretations. High-speed internet access has become a significant feature of many policy deliberations. It was the main topic in the AOL-Time Warner merger happening at the Federal Trade Commission, and the Federal Communications Commission has an open schedule asking questions about whether the commission should take action to control or made open access to high speed cable data lines (Chisenga, 2007:70).

High-speed access service offers the probability for innovated services like flooding video and other high-value content. According Davis (1986:80),

> NTIA found that 10.7 % of the internet connected households had high-speed connections. This ranged from slightly above 7 % for low income households to almost 14 % for high-income households. None of these are extremely high – low-speed dial up represents the vast majority of connections in all income categories. Possessing your own computer is more cherished because of the capacity to surf the internet and connecting to the internet is made valued due to the content available.

As high-speed internet interconnection upsurges, there will be more exact extra high-speed content. With extra diversity for the content, more exact content and content tailored to a particular connection methods, the importance to connecting to the internet should surge. This increase in usage may showcase many matters concerning the differential access to the internet even amongst persons who are connected. It may be because certain households have access to vast and improved services as much as certain households subscribe to cable and pay for the cable services. Further matters like whether the network operator such as the cable modem provider can widen the services or affect rivalry are also likely to arise (Sekaran, 1992:68).

The disparity in home access and usage exaggerates the disparity in access to computers and the internet. Data reviewed by Baskaran and Muchie (2006) indicate that certain persons without home computers are able to utilize computers and the internet. In 1998, 17% of Americans (16.1% of Californians) accessed the internet outside their home, largely at work. 56% of Americans who access the internet outside their homes utilized it at work, almost 30% utilized it at school and around 13% accessed it on someone else's computer. Library access was less common, with only about 7% of respondents reporting the internet usage in libraries. Through these mutual sources, practically as many people accessed the internet through sources outside the home (17.0%) as they had home access (21.4%). Though the division of access between home and other sites has likely tilted towards the home over the past two years, there are indications that people without home connections are often still able to connect to the internet (Baskaran and Muchie, 2006:68).

Examination on the connection discrepancies amongst dissimilar clusters and any subsequent policy remedies need to take into cognisance the reasons why individuals are not connected to the internet. The Pew The internet and American Life Project published the results of a survey in September 2000 that offers certain perceptions into these questions. They report that 57% of persons without the internet access indicate that they do not plan to log on. The review outcomes discovered that these factors rely upon age; older Americans are much less likely to need to be connected than younger people, and the majority of persons who are not online who are under 50 years old plan to surf the net. The paper goes on to indicate that the substantial numbers of non-users cite matters apart from the cost of computers and the internet access as challenges as far as the online fraternity (Sekaran, 1992:68).

Pew scrutinizes demographically equivalent individuals who utilized and those who did not utilize the internet. It is revealed that the entertaining commotion and e-mail are imperative aspects encouraging the internet connections.

This analysis proposes that high-minded terrains about the civic, educational, or even commercial virtues of the internet would perhaps not be enticing to those in the Never group. Rather, it recommends that "nevers" might be more open to the idea of going online if they are persuaded that the internet is convenient, entertaining, and not-too-difficult to utilize (Kaplan, 1989:568).

In conclusion, Pew divided the cluster of non-connected individuals into the persons who have never had a connection and those who recently had a connection, but dismissed it and somewhat more than 10 % of the non-connected individuals who recently had been connected? The recently connected patrons are slightly more marginal, are slightly educated and have lesser income than present internet patrons, but thoughtful on the overall populace. "Only 11 % of these recently connected patrons appealed that the connection was too luxurious as a reason they surrendered their connection" (Sigh, 2001:40).

The paramount South Africa IP address was offered to Rhodes University in 1988.

On the 12 November 1991, the first IP connection was linked between Rhodes computing centre and home of Randy Bush in Portland, Oregon. By November 1991, South African universities were connected through UNINET to the internet (Baskaran and Muchie, 2006:56).

The internet patron base in South Africa amplified from 2.4 million in 2000 to 5 million and 12.3 million in 2012. The increase on the utilization of the internet in South Africa was improved by the connectivity and access to the internet in public libraries as a way to bridge the disparity amongst the information-rich and information-poor societies (Darries, 2003:24).

The overall figure of wireless broadband subscribers oversaw that of static line broadband subscribers in South Africa during 2007.

In 2012 there were 1.1 million static line broadband subscribers and 12.7 million wireless broadband subscribers. The connection was meant to bridge the digital divide in South Africa through e-governance and the establishment of equivalent access to technological resources in the communities through

free computers and the internet provided by the public libraries in South Africa (Kroukamp, 2005:67).

Many studies have been conducted that exemplify the usage of the internet across the world. Below are perspectives of different authors from different countries with regard to the internet usage in the libraries, particularly public libraries as a way of bridging the digital divide (Mutula, 2004; Mwiyeriwa and Ngwira, 2003; Raseroka, 2004).

According to Mutula (2004), "the digital divide occurrence in Africa establishes itself in several forms". For example, a cooperative study by the writer and a Fulbright Scholar from Union College, New York in the USA on the fulfilment level of students utilizing the internet at the University of Botswana exposed that bandwidth was a key problem. For example, the system tray of the writer's computer in the office at University of Botswana exhibited a persistent access speed of 10 Mpbs. "In contrast, the same reading in the office of the Fulbright Scholar's office computer at Union College read a persistent access speed of 100 Mbps, a speed that is ten times greater, although it dignified only the interval amongst the personal computer and the final router or switching point to which it was connected" (Mutula, 2004:4).

Mutula (2004) and the Fulbright Scholar, apprehensive about the students' likely obstructions as the internet patrons, decided to pull them on the topic. The students shared computers in laboratories and in libraries.

> Consequently, the undergraduates of library and information studies undertaking library information science level 212: Information resources in business, and the graduate students of LIS 624: General management in information services, were surveyed in early 2003 as to their usage of the internet at the University of Botswana. The study sought to regulate the length of time mandatory queuing for physical access to a computer, and the length of time mandatory waiting for responses from those computers when connected to the internet. A total of thirty-six (36) students responded to the survey (Mutula, 2004:5).

The research revealed that a considerable postponement was encountered when the University of Botswana students sought direct connection to the

internet. For instance, six out of seven database studies required more than a minute of awaiting the results after clicking the mouse; seventeen out of twenty-seven academic correlated searches of the web required more than two minutes of awaiting results; while four out of seven recreational usages required more than two minutes to retrieve the results. The research revealed that the mainstream of the respondents were not utilizing the internet for academic purposes. The respondents quoted four reasons for their little usage, and in declining occurrence of reporting there were:

- Inadequate numbers of computers accessible;

- Insufficient training;

- lesser response epoch, and

- Limitations in period assigned to every patron.

Mutula (2004) furthermore sought to determine what reasons were behind the problem of delays in response time. The study assumed that the eminent digital divide was in evidence at the University of Botswana. The insufficiently lesser access to computers and the internet at the University of Botswana was noticeable to the scarcities of coming bandwidth. The bandwidth insufficiency could stalk from a great many phases on the way: from the discrete workplace into the system of the University of Botswana, from the University of Botswana system out to its ISP, from there to the nation's doorway via its telecommunications agency which refers to Botswana Telecommunications Corporation and then surpass the internet beyond Botswana towards the whole world (Mutula, 2004).

Every phase in the transmission of data is a distinct circuit with its own bandwidth, and a bandwidth bottleneck could transpire in one or more of the circuits amongst the routers and the exchange points all along to that system of pipes that transports the internet to students and lecturers. For instance, even though Botswana has a fibre optic ring, the nation's whole incoming bandwidth is 14 Mbps. To bring this into viewpoint, 14 Mbps is substantively fewer than the small college in the USA. Correspondingly, Africa lacks a regional system, but each republic connects distinctly to more luxurious

foreign circuits. The internet comes from foreign countries by certain modes that differ in connection volume and rapidity. For instance, satellite and undersea cable are utilized by Botswana, and even though satellite carries a certain share of Botswana's bandwidth, the undersea cable mode is indicative of a go-slow.

The bandwidth inadequately is not narrowed to Botswana only, but also touches many nations in Africa. In Malawi, for instance, as an outcome of little bandwidth, access to the international net is little and shakes the eminence of access to information. "Mwiyeriwa and Ngwira (2003) indicated that in university libraries in Malawi, notwithstanding the wide diversity of electrical resources that were accessible through the Programme for the Enhancement of Research Information (PERI) project of the International Network for the Availability of Scientific Publications (INASP) and the Health Inter-Network (HINARI), the quality of the internet connectivity was often a great interference." Other factors of digital divide among libraries in Africa embrace the expensiveness of access to information through telecommunication resources. According to Raseroka (2004:23),

> the regular the internet access charge as a percentage of the GDP per capita was, for example, US$92 (107%) in Uganda, compared to the USA rate of US$29 (1.2%). These aspects destructively prejudiced the rate of acceptance of the internet as an information access tool by African universities.

The issues of the digital divide in Africa are also accredited to ineffectiveness in the usefulness of resources. Mwiyeriwa and Ngwira (2003) indicate that the technological resources needed for maintaining any technological connectivity is mostly deficient in Africa. More issues affecting Africa comprise a short demand of individuals who are able to puzzle content, for whom there is a high international request, and the nonexistence of cheap inducements to technology expertise, counting web content designers, subsequent to the continent effortlessly trailing proficiency to other regions.

Africa is well known for its low literacy level, and this destabilizes content creation and usage in Africa. In Botswana, for instance, the adult literacy level

in 2001 was likely at 21.94 %, in Namibia it was 17.35 %, and in South Africa 14.39 %. Subsequently, 30 % of the populace in Mozambique was illiterate in the year 2002. To add more to that, the lack of suitable indigenous content and the desire for manual resources make usage of the internet less interesting (Mutula, 2004:25).

The digital divide in Africa is intensified by the under-usage of prevailing technological resources because of poor policies and procedures. In Botswana, for instance, a contemporary data network such as Government Data Network of fibre cable operates diagonally. Raseroka (2004) speculated why, "whenever governments' network resources in Africa explore, and bulk communications service acquiring enabled cheap prices, the unused capability was not often arranged to offer the internet service facility to the public."

The digital divide in African libraries is instigated by numerous impediments to access to technological resources, and by low application of prevailing technological resources. Mutula (2004:30) perceives that "libraries in Africa that had executed ICTs generally experienced under-utilization of the technology on account of the lack of sound information technology exploitation skills as well as restrictions imposed on use in some universities". In some Kenyan and Zambian university libraries, for example, the internet access was restricted to postgraduate students and staff only. Similarly, reliance on donor funding for the purchase of such resources as PCs and subscriptions to databases exacerbated the digital divide, especially when such donor support ceased (Mutula, 2004).

Many libraries in Africa do not have computerization policies. Raseroka (2004) points out "that in general, African universities did not provide funding for the introduction of technology for the usage in academic libraries due to the fact that there were no policies and strategic plans and actions for the introduction and usage of technology that provided access to information that supported academic research and education". She further noted that "there was no investment in capacity building programmes for staff and students, and the usage of information technologies by academic libraries seemed to have been

prompted by information professional's exposure to international technological developments for information resource sharing and access to the funding.

African libraries' access to technological resources is hindered by deteriorating resources. In West African libraries, for example, Raseroka (2004) estimates that the budget could be as low as 2%, and notes that deteriorating resources have resulted in a general educational disaster which affected the provision of learning support materials both in print and in electronic layouts. Similarly, libraries' access to technology in Africa is affected by intra-country divides, which subsequently hinders networking among libraries due to lack of maintenance over the whole countries.

2.7.2 Policy implications

The internet is increasing at an extraordinary rate, more quickly than telephones or cable television did at comparable phases in their antiquities. Not surprisingly, socio-economic clusters vary in their implementation rates of information technology. The main alteration seems to be due to income, even though there are cultural variances even when income is seized constant. Assuming the speedy implementation of the internet, it is unclear how these variances will change over the next few years. It is probable that these modifications will narrow expressively as many people decide to cherish the internet and get connected. This may happen because new and altered content is established because prices for connection and computers drop (Sigh, 2001:70). Communities can also connect to computers and the internet in public libraries at a reasonable cost or for free of charge depending on the policies in different public libraries.

Given that the grants for telephone service are ineffective, and that rural internet connection is higher than inner city connections, offering a universal grant for rural internet connections will sponsor numerous individuals who are subscribed to it. However, if the internet access is to be sponsored, the grants should be embattled at persons who would not subscribe due to the cost. As a result, some internet service suppliers provide free or inexpensive

connections. The programmes intended to teach patrons about inexpensive alternatives have an impact on total internet usage than a programme that duplicates the prevailing policy and procedure to offer a broad funding in sophisticated areas. The matter of probable subsidies for expensive internet connections showcase related trade-offs in that with current technology, offering advanced connections to rural areas will be expensive parallel to the cost of subsidies for low-income patrons in urban areas (Garrett, 2002:75). Free access to computers and the internet services can only be provided in public libraries if not for free but on a very reasonable charge.

Based on the research outcomes, individuals might gain from education about where to attain second-hand computers, but which are compactable for the internet, and on how to utilize computers and the internet. To add on this, clients' education programmes might assist to lessen the ambiguity about the usage of the internet. Such programmes would perhaps be comparatively inexpensive compared to the grants for rural expensive telephone service. To add on this, given that the research outcomes show that younger people are much more acquainted and contented with the internet, such initiatives would not have to rise over time. However, as computers and the internet connection multiply, such initiatives could be decreased, rather than multiplied as a connection funding would, inevitably (Griffiths, 2008:80).

2.8   Problems of digital library development

According to Kirkpatrick and Cuban (1998), the development and establishment of public libraries has not remained precedence of governments in the emerging nations. According to Kirkpatrick and Cuban (1998), "governments suffer to provide the elementary human needs like food, water, health, electricity, and sanitation, and transportation." Subsequently, public libraries have been struggling from monetary and other disasters such as lack of suitable technological resources and the training of information professionals to provide quality information and library services. Public libraries have also been impacted by a vast number of social issues, the main

ones being the deprived literacy statistics. While governments are striving to develop the altitudes of basic literacy, appropriate usage of library and information services require for another level of literacy. This refers to the information literacy that is totally essential for individuals to become decent information users.

Due to insufficient and suitable technologies and trained information workers and financial resources, many libraries in the emerging and emergent countries do not have a well-developed and accurate OPAC system, computerized library management systems, and digital libraries. This is why when compared with developed countries, libraries in the emergent countries are left behind by at one cohort. Digital divide and insufficient technological resources for digital library research and improvement may widen the disparity far more significantly amongst library and information services in developed and emerging nations (Kirkpatrick and Cuban, 1998:85).

According to Kulak (1998), the following is a list of issues that disturb the digital library research and improvement in the emerging countries:

- Lessening library budget that compels library management to suffer to sustain the least standard of services, leaving no space for contemporary projects and improvements.
- Insufficient monetary maintenance, particularly for digital library research and improvement.
- Lack of a completely improved and accurate OPAC system and insufficient access to electronic information resources that include the online databases, e-journals, etc.
- Poor information communication technology which refers to computers and networks.
- Deprived information technological resources and facilities for access to the internet.
- Severe government and organizational policies and procedures on access to the internet.
- Absence of well-trained information professionals or librarians.

- Deprived information literacy statistics that causes insufficient appreciation of contemporary information services and their utilization.

2.9   Solutions to bridging the digital divide

According to Sivin- Kachala and Bialo (1999), digital communities and other programmes such as support from the Bill Gates Foundation have been established to bridge the digital divide at a macro level. At this level, universities have a key role to play in promoting graduates who are just not computer literate, but computer knowledgeable. It will be these graduates who will offer guidance, and ensure that their institutions such as public libraries become players in the government information systems. Sivin- Kachala and Bialo (1999) deliberates on some of the possibilities that could be executed:

- An ICT philosophy has to be implemented at universities. Researchers have to capacitate themselves so that they provide guidance to their students to follow on their footsteps. For if the researchers are using technology, their students will also adopt technology.
- Discard out-dated technology and provide the workers with the internet capable laptops. For researchers and lecturers to offer a technical guidance, they must be equipped with modern technological resources. Lecturers can utilize the internet for research and can instil the same culture and values amongst their students.
- Offer training programmes for all staff. Universities have to enhance the expertise of their employees. Proficient, accomplished staff can inculcate assertive technological guidance for their students.
- Implement computer literacy programmes and web-based research across all schools and departments. More laboratories have to be built and equipped to offer the best computing skills to students from all disciplines. All students should be skilful in consuming an operating system such as Microsoft word, spread sheet, presentation software, database software, the internet browser and outlook software.

- Establish and maintain an electronic learning culture where lecturers post notes and links on their modified websites. If lecture notes are published online, it will be compulsory for students to utilize the internet with a particular purpose rather than just browsing uselessly when they have free epoch.

- Establish an electronic research culture where students are trained and invigorated to utilize the internet for research facilities. The internet is an ecosphere of knowledge that enlarges one's knowledge prospects. Students have to be introduced to the numerous virtual library resources such as LexisNexis and Jutastat.

- Ensure that resources are accessible 24 hours a day, on weekends and during vacations. In many universities, computer facilities are not used after hours and during holidays perhaps due to the probability of security measures. Therefore universities have to provide after-hour security so that the students will have access to the resources.

Different studies and efforts have been conducted and completed in attempting to discover solutions to bridge the digital divide throughout the world through the computer and the internet services provided by public libraries. This includes the studies of Gomez, Ambikar and Coward (2009), Gomez (2010), Russell and Huang (2009), Stevenson (2007), Mutula (2005), Sedimo, Bwalya and Duplessis (2011), and Peuchovaile and Lipeikaite (2015).

Gomez, Ambikar, and Coward's (2009) study was designed to provide early perceptions into a continuous research comparing the public access locations such as libraries, cybercafés and telecentres in 25 countries worldwide. The researchers examined the information needs and the usage of information and communication technologies in these public access places, with a specific emphasis to underserved populaces.

Gomez's (2010) study looks at the structure and flexibility in global research design, using methodological choices in landscape study of public access in 25 countries. This research is aimed at showcasing the research procedure for the international survey referring to the landscape of public access to ICT

in 25 countries, a survey conducted in the year 2007-2009 by the University of Washington's Center for Information and Society, with a funding from the Bill and Melinda Gates Foundation. The survey observed public access locations such as public libraries, telecenters, and cybercafés that provide public access to information, particularly via information and communication technologies in 25 countries worldwide.

Russell and Huang's (2009) study tackles the question of what libraries can do to assist in narrowing the digital divide that creates inadequate access to information. This survey inspects the ongoing problem of digital divide in the United States based on the collection of data from numerous nationwide and organizational surveys along with their own studies. The results indicate that the issues of digital divide, which is particularly affected by numerous demographic dynamics, still exists notwithstanding the speedy acceptance of new technological resources, which is happening amongst the majority of clusters of Americans in the United States. The survey concentrates on the roles of libraries in nowadays' communities by observing the ways libraries can actively utilize and explore upon their work toward balancing access to information for the future benefit of those who continue to be affected by the digital divide.

According to Stevenson (2007), "in January 2007, the Bill and Melinda Gates Foundation (BMGF) proclaimed its second multiyear technology funding programme for America's public libraries." The purpose of Phase II is about keeping societies connected whereas the next stage is to assist public libraries nourishing public access computing resources placed during Phase I. The goal of the programme is to bridge the digital divide. However, it is a digital divide as described by Bill Gates, not the public library society. Placing Gates' generosity within a critical policy and procedural frame, this survey reflects on two alternatives to Gates' problem description of the digital divide, and how knowledge might benefit persons served by public access computing services as originating in public libraries. According to Stevenson (2007), "the two explicit alternatives measurement come from the Free Software Foundation (FSF), and Community Informatics (CI)." Meaningfully, both social actions endorse the probability of free and open software as a vital part of any

possible answer. In conclusion, the public library literature is studied for designs in the community's use of FOSS, and the argument is made for its usage in the provision of PAC services.

Mutula's (2005) study in bridging the digital divide via e-governance: A suggestion for Africa's libraries and information centers, whose aim is to showcase the status of the digital divide in Africa and the insinuations for libraries. It demonstrates that, conflicting to current published results, the digital divide is not lessening. A common literature review is conducted, together with a case study of the digital divide in an academic platform. The results indicate that Africa still struggles from widespread poverty, and subsequently the infrastructure that could be used to bridge the digital divide is focused at meeting the population's simple survival needs, including food, shelter, health care, and housing. Moreover, governments are rapidly espousing e-government programmes that libraries should expand for computerization (Mutula, 2005).

Supplementary investigation is required to indicate why, given that the disparity amongst the rich and poor countries is elevating, and that commercial improvement is a good prognosticator of information communication technology uptake that the digital divide among the developed and emergent countries is indicated to be lessening. Libraries have the prospective to utilize e-government programmes for automation, but they have to exercise effect on their governments via activism and other procedures. Few surveys, particularly in Africa, have expanded the prospective of e-governance for library computerization (Mutula, 2005).

Equally, the subject of the digital divide has in the recent years been looked at largely from intercontinental and nationwide viewpoints, with the tiny courtesy being paid to the presence of the concept within libraries. In conclusion, prevailing studies on the digital divide largely utilize information communication technology metrics without giving much devotion to the entirety of factors that impact on the digital divide. This survey provides a suggestion on how e-governance could be utilized to lessen the digital divide inside libraries in Africa (Mutula, 2005).

Sedimo, Bwalya and Duplessis (2011) conducted a study on winning the digital divide in Botswana and South Korea digital divide position and intercessions. They state that "Botswana is placing different programmes towards launching itself as knowledge based economy". Renovating from a resource-based to a knowledge-based economy is partially based on invention, surveys and improvement competence, knowledge channels, and the funding of research and improvement programmes. Bridging the digital divide and lessening the intra-national divide brings about universal information and communication technology usage that interprets into changing work designs and ultimately converted parsimonies. These surveys summarise the various interferences applied in Botswana to bridge the divide. The South Korean involvement in bridging the divide is deliberated as to serve as programmes on how to efficiently bridge the divide in Botswana's programmes.

Utilizing a combination of investigative and experiential study, this paper indicates the results on the point of information and communication technology uptake in Botswana. The study also examines the level of the digital divide in the country. The outcomes of the research indicate that the digital divide is much more realistic in Botswana than it is in South Korea. South Korea has placed the vigorous strategic programmes towards decreasing the digital divide, and this has fundamentally exceeded its alteration into knowledge society. This article exhumes the various indicators that may be used in policy establishment and the interferences that have to be taken at both the individual and national level to bridge the digital divide.

The prestige of the internet implementation in Botswana can be recognized by evaluating the newest statistics released by the ITU and the Botswana Telecommunications Company; which is soon to be substituted by the Botswana Communications Regulatory Authority. According to the ITU (2009),

> there were 120 000 internet users as of September 2009 in Botswana. This signifies 6% of Botswana's inhabitants which represent 2 065 000. Considering the scope of the country at 581 730 km2, Botswana is sporadically inhabited. The ITU (2009) further determines that there were

15 000 internet users in Botswana in the year 2000 representing only 0.3% of the populace at that epoch.

Peuchovaile and Lipeikaite (2015) emphasise the building of librarians' capacity to utilize the information and communication technology in services that meet community needs in Africa. The process of espousal of information and communication technologies is hastening universally; however, low-income frugalities are still delayed, predominantly in sub-Saharan Africa. To connect this disparity, many African governments have partaken on a nationwide information and communication technology programmes. In certain countries, these initiatives include equipping and resourcing public libraries with information and communication technology.

Even though information and communication technology unlocks access to new library roles in Africa, it also brings the challenges to information professionals who should accept, study to utilize, accomplish and sustain new information technology. The information and library professionals should deal with the elevation of expectations of library patrons and the establishments around the worth and probability of the information and communication technology. Failure to achieve these prospects would lead to amplified uncertainty of the information professionals and disappointment among their patrons.

To assist libraries utilize the information and communication technology to its full probability, the EIFL Public Library Innovation Programme (EIFLPLIP) has established a capability-building outline for information professionals working in public libraries that aim to support the amalgamation of information and communication technology into new public library services that meet the needs of the local community. The outline grew out of EIFL-PLIP's knowledge in Africa, and involves four components: radical computer literacy, electronic resources and searching, project management for new library and information services, and sponsorship. The outline has been surveyed in three countries where there has been some development in government supported information and communication technology roll out to public libraries. The following are the countries that were piloted: Kenya, Uganda and Ghana. This

survey showcases the income and influence of this programme, deliberates more on training procedures and topics learned. The survey also imitates on the efficiency of the training initiatives in motivating the embracing of information and communication technology in public library services in Africa.

In the 2009, with scholarship from Bill and Melinda Gates Foundation, the intercontinental non-profit institutions such as EIFL (Electronic Information for Libraries) established the Public Library Innovation Programme (EIFL-PLIP). The purpose of the initiative is to improve community improvement through maintaining the establishment of advanced public library services, and by validating the contribution that public libraries can succeed in building information society. Since its inauguration in the year 2009, EIFL-PLIP has maintained programmes of more 21 innovative public library initiatives in eight African nations.

Most of these programmes have modified to become maintainable library services. Throughout working with the libraries on these programmes, together with the experience gained in working with same initiatives in Asia, Europe and Latin America, EIFL-PLIP established a model for presenting new information services in the libraries. The EIFL-PLIP new service improvement model presents stages for new service expansion, from identifying the needs of the community to take a suitable action from attaining results to influence assessment and resourcing sustainability. The phases comprise supporting the library to play a superior role in the improvement of the society, and in raising awareness about the influence of its services in the society. It is very important to notice that the entire process of new service improvement for the library programme team is also an exhaustive learning in rehearsal experience that contributes to library dimensions and inspiration for invention.

According to Petuchovaite and Tamakloe (2014:101), lessons learned by EIFL-PLIP in supporting ICT-based programmes at public libraries proposes that there are at least five aspects that are indispensable for library service invention to be effective and valuable to the community:

- Accepting community challenges as opposed to challenges of public library and explaining local needs and disparity in support and services.

This enables the library to focus its services on imperative confined issues.

- Valuation and assortment of pertinent and inexpensive technological tools to meet the recognized community needs.
- Capability to build library staff so that they feel assertive and capable to assist and train library patrons to take advantage of the new technological tools, and services. Evaluating the needs of the community, building appropriate corporations, choosing applicable technologies to introduce the service and seizing the impacting support for sustainability.
- Repackaging and making accessible digital content pertinent to the needs of the local community.
- Seizing evidence and the effect of new library and information services, and utilizing this evidence to look for funding from the government, and rallying community support to withstand technology provided services.

In the year 2014, EIFL-PLIP conducted a survey on how and why public libraries modernize. The results recommended that a crucial motivating aspect is the information professionals' wish to make the library more appropriate to the community. This outcome shows that ideas of community service are important to the information professions, particularly in public libraries. Training that improves ways of indulgent of the needs of the community, provoking community criticism and seizing the effect of new facilities in the community would therefore be important. The pilot study also found that information professionals are encouraged to invent by achievement stories about relevant, and flexible innovative services provided by other public libraries. Through interaction and knowledge distribution, information professionals participate in peer-to-peer programmes and get the necessary support and motivation to try new things. This goes into practical endorsement for the library community to set conditions that enable knowledge sharing amongst public libraries within the country, and across the regions in Africa.

The prospectus of the capability-building initiatives was built around four topics, namely: information and communication technology skills; the internet

facility and database research; new public library service improvement; and communications and support. The capability building initiatives was piloted in Ghana, Kenya and Uganda. These three nations were nominated because of the need for government programmes to equip libraries with information technologies.

According to Petuchovaite and Tamakloe, (2014:111),

> from June 2014 to March 2015 EIFL worked with local partners with responsibilities and experience in public library improvement to modify the essential curriculum making it pertinent to local needs. EIFL-PLIP's local partners were TechAide and Ghana Library Authority in Ghana, Kenya National Library Service in Kenya, and Maendeleo Foundation in partnership with National Library of Uganda in Uganda.

In Kenya the training was improved by the support of the UNESCO Regional Office for Eastern Africa, and with partnership with Goethe-Institut Kenya. The process of customization of the training in each pilot country resumed with a skills audit: a questionnaire which is based on self-assessment methodology. This resource assisted in collecting imperative data about the present level of information professionals' capabilities and self-confidence in areas like information technology, project management, as well as advocacy. Readiness and interest by the information professionals to resume with innovative services was a significant element in selecting probable trainees. Trainers in the initiatives included EIFL-PLIP team members and staff from grantee libraries from Africa, intercontinental and confined experts in specific subjects.

Building on the audit results, the EIFL-PLIP team worked with trainers, acclimatising content to the public library situation in particular countries. Local partners also contributed to the curriculum improvement throughout the whole process. Modified modules were distributed in a sequence of concentrated and collaborative workshop sessions. Each workshop took from 2 to 5 days, with breaks of 1-2 months in between each workshop. During these breaks, information professionals were motivated to work on assignments, smearing new knowledge and skills in actual life conditions of their libraries. Generally, the capability building initiatives, including the joint

development process with the local partners, content customization and distribution, and impact assessment took around 12 months to complete.

In South Africa, the sum of R32 million has been put aside towards Mzansi libraries online, which offers free access to the internet connectivity for all South Africans through public libraries. The Deputy Minister of the Department of Arts and Culture, Rejoice Mabudafhasi is reported by IFLA:

> The state of libraries in South Africa (2015) indicated that the main aim of the programmes is to generate a knowledgeable and information literate society in support of the objectives of the National Development Plan. This initiative is also meant to improve the superiority of life of South Africans by improving and maintaining public libraries and library and information services that they provide. The project will capacitate the community with information that can help them to contribute evocatively in a democratic and knowledge-based or information society. It is in this light that patrons' opinions with regard to the role of the public library in bridging the digital divide are indispensable.

The report states that the partnership between the Bill and Melinda Gates Foundation and the National Library of South Africa is to offer computer equipment to 27 libraries countrywide. Three libraries per province are profiting from this project. The Bill and Melinda Gates Foundation, in partnership with the National Library of South Africa, are running a pilot project in all nine provinces to explore access to digital facilities.

The report states that in the Free State, Mangaung, Edenville and Zamdela public libraries are the beneficiaries of the project. Each library will obtain 20 computers, 10 tablets, 10 e-readers, one document scanner and a gaming room to the value of R470 000 for public use.

> These technological devices provided will indeed open the doors of learning and endorse the culture of reading and sharing among Africans and also the provision of computers with free internet access will bridge the digital divide among Africans, said the Deputy Minister Mabudafhasi.

The Deputy Minister also indicated that the technology will also enhance opportunities for learning and cultural exchange initiatives.

The National Department of Arts and Culture, in collaboration with provincial Departments of Arts and Culture, is coordinating the implementation of the public library conditional grant in all the provinces with the purpose of empowering all societies to gain access to information and knowledge through advanced public libraries countrywide, and this will help eliminate illiteracy, eliminate disparity in the information sector, endorse social consistency and develop a knowledgeable and reading nation, indicated the Deputy Minister Mabudafhasi.

The Deputy Minister also indicated that since the inception of the community library conditional grant, 78 new public libraries have been built in South Africa.

2.10. Causes of the digital divide

Having discussed the development of the concept digital divide and its related problems and dimensions, it is evident that digital divide is the recent reminiscent concept that states the differences in access to and the utilization of information technology that are interrelated with race and culture, income, masculinity, age, residence, and other factors of the socio-economic prestige. Socio economic factors, including illiteracy, poverty and political factors contribute to the concept of digital divide because illiterate people cannot use computers and the internet due to the fact that they do not have skills to use them, while the impoverished people cannot afford to buy computers and mobile data for the internet connection. As such they cannot access the internet on their own. The Wilson s' models of information behaviour also revealed a number of variables that serve as determinants for one to have access to information through computer and the internet. Several studies have subsequently revealed that the digital divide is the direct result of the division of society into demographic characteristics (Singh, 2009; Salinas, 2003; Davis, 1986; Mutula, 2004; Bentley, 1998; Robert, 2004). Gender, age, geographical factors, levels of education, income level, race, as well as skills and competencies in using ICTs have been labeled as the major causes of the digital divide in the society. The manners in which these demographic factors cause digital divide are discussed below.

2.10.1. Gender disparities

Singh (2009:17) discovers that males have more access to the internet than females. This disparity is partly ascribed to the observation that information technology is a practical topic for men, hence many females look away from this. This can be a causal aspect since most females, especially in rural areas, still have the perception that computers are made for males. But through influence from public libraries, this perception can be eliminated. However, this study has nothing to do with gender comparison of access to the internet. Nevertheless, NMMDM Annual Report (2014 / 2016: 9) shows that the number of females in the district has always been more than that of males since from 2012 t0 2015.

2.10.2. Lack of ICT skills and support

In several underprivileged clusters, people in the society are regularly omitted from utilizing the ICT resources because of their little levels of computer and technology expertise, and also more prominently of the literateness of the community (Salinas, 2003:102). This is an important aspect that stops other people from utilizing the internet and related technological infrastructure. However, technologically equipped public libraries can provide effective access to computers and the internet services to the community in a way that bridges the digital divide.

2.10.3. Geographical factors

The inaccessibility of computers and the internet throughout the world in rural populations demonstrates a huge transformation regionally and in the entire world. This is a consequence of lack of the internet access or infrastructural resources, culture and language. In most situations there are inequalities among individuals in rural areas in terms of access to computers and the

internet (Bentley, 1998:4). Since there are public libraries in many rural-urban areas nowadays, these public libraries should be equipped with proper ICT services so that everybody will have proper computer and the internet services via public libraries.

2.10.4. Educational factor

Bentley (1998:16) claims that "an individual's level of education causes the digital divide in the sense that individuals who are not sophisticated do not have the passion to browse the internet and subsequently, they suffer the inequalities of the digital divide". Such individuals do not know how to utilize computers and they cannot even read and write. It is those who are sophisticated, those who can read and write who have the passion to utilize and access computers and the internet that are also accessible in public libraries. Public librarians should encourage even the uneducated people to log on to computers, and training should be provided to such people.

2.10.5. Income level

According to Bentley (1998:9), income level is the most contributing factor to the digital divide. People who cannot afford computers, smart phones and the internet especially in the rural communities where there are no public libraries are affected by the disparities brought about by the digital divide. It is those who have cash who can afford to buy computers and the internet connectivity on their own and as such, they are not affected by the inequalities of the digital divide. It is significant to note that only public libraries which are connected to the internet deliver ICT services similarly to both the information poor and the information rich people. Those who cannot afford to buy computers and data for the internet should have access in public libraries. According to Robert (2004: 4) the digital divide is also viewed as a lack of access and training, but as market competition rises and optional

programmes are executed, technology will become more inexpensive for the poor and will be offered by public libraries. The NMMDM Annual Report (2014/16:10) shows that 73%, 56% and 43% of the proportion of households in 2013, 2014 and 2015 respectively had no income, while 54% 21% and 24% represented the proportion of population in low skilled employment in the same years respectively.

2.10.6. Race

Robert (2004:1) is of the opinion that "even though computer and the internet usage are escalating in the United States, huge inequalities occur amongst cultural clusters". For example, 29.3 % of African Americans and 23.7 % of Latinos use the internet. By contrast, 50.3 percent of white non-Latinos use the internet (U.S. Department of Commerce, 2000). Ethnic inequality in computer proprietorship is not as huge, however it is considerable. The digital divide may have financial penalties for underprivileged marginal clusters as information technology expertise become progressively vital in the economic world, and the internet is anticipated to become the main medium of communication, market, education, and entertainment in the 21st century (Robert, 2004:2).

Public libraries should provide information and the internet access to all regardless of their race. Forthcoming commercial, education and political improvement of the marginal and cultural clusters may be contingent on access to computers and the internet. For example, in the federal government alone, each of the Departments of Agriculture, Commerce, Education, Health and Human Services, Housing and Urban Development, Justice and Labour, has programmes that address the digital inclusion of various groups. One of the largest programmes, known as the E-rate programme, provides discounts to schools and libraries for the costs of telecommunications services and equipment with the level of discount depending on the economic need and rural location (Robert, 2004:2). Nevertheless, race remains a critical influence on the concern of the inequalities on the digital divide.

In Ngaka Modiri Molema District, public libraries are used often by the black people in the communities. This is because Ngaka Modiri District is dominated by African people and as results they heavily use the computers and internet or the library services. As a result this shows that the public libraries are bridging the digital divide in Ngaka Modiri Molema District (The NMMDAnnual Report (2014/16:10)).

2.10.7. Age

"It has been noticed that a difference in access according to age is gradually disappearing" (Bentley, 1998:3). However, it is perceived as a causative aspect. It does not mean that the differences in utilizing computers and the internet will therefore vanish at the similar degree. Hence, it is disputed that young people utilize more information technological resources than older people because they are born in the epoch of technology. Elderly individuals suffer from computer-anxiety, lack computer literacy or have no access to a casual system of information and maintenance. Subsequently, the problem of age plays a role in causing the digital divide. Public libraries should also provide information and the internet services to everyone regardless of their age (NMMDM Annual Report 2014/2016:10).

In all according the NMMDM Annual Report (2009/2010) Ngaka Modiri Molema District Municipality (formerly Central District Municipality is one of the four districts of North West province in South Africa. Its capital is Mahikeng, which is also the capital of the province. The NMMDM is a semi-rural area that covers an area of 31039 square km and shares an international border with the Republic of Botswana. It comprises of five local municipalities namely: Mafikeng, Ratlou, Ramotshere Moiloa, Ditsobotla and Tswaing.

According the NMMDM Annual Report (2009/2010:201) as a predominantly rural area, the North West Province does not have sufficient spatial guidelines for rural development at a local level. Water provision, both infrastructure and sources, is a real threat to the community. The area is characterise by the following:-

- inadequate infrastructure and service delivery,
- poverty,
- high unemployment (especially in the rural areas),
- inadequate skills and education, and
- HIV and AIDS.

2.11. Benefits of computers and the internet

Information and communication technologies (ICT's) are considered to be key potential factors in economic growth and social development (Mwin and Kritzinger 2016). Furthermore ICT's have been recognised as a mechanism that plays an essential role in transforming various aspects of human life, not only in the workplace, but also in the homes of people around the world (De Lange and Von Solms 2012). Acilar (2011: 231) also comment that ICT's, especially the internet, have affected the way we all live, communicate work, study, and socialise in many ways, and further that the ICT 's have the potential to support economic growth, to provide opportunities, and to increase democracy in developing countries. . Therefore, access to ICT has an impact on the social, economic, educational and cultural lives of people.

The reality is that computers and internet play a crucial role in the lives of individuals in all communities. According to Darries (2003: 73) it is almost impossible to imagine, in the current world, that someone can live without computers especially in this information age. Computers have become an electronic device of almost every day use for individuals of every age in Ngaka Modiri Molema District. They are essential in almost all the business dealings that are made nowadays.

Computers have gained significance as they have improved the efficiency and productivity of work done. Large amounts of information in industrial and business sectors as well as in the personal lives are stored on computers. The people in rural communities of Ngaka Modiri Molema District use the library computers for the following purpose: access the internet, for typing

their personal and professional documents, play computer games and for social networking. Members of the communities in the Ngaka Modiri Molema are then be able to access health related information, search for jobs, apply for bursaries online and also apply for online jobs. Computers are also used for communication, people in Ngaka Modiri Molema use computers to send and receive e-mails.

Becker, Crandall, Fisher, Kinney and Landry (2010) comment that people from all walks of life rely on the internet to look for jobs, find health care, and read the latest news. Computers and the internet in the digital age are utilized for different reasons: for research, sending and receiving e-mails, playing computer games, and for typing professional or personal documents.

Becker, Crandal, Fisher, Kenny, Landry, and Rocha (2010) discuss social connections, education, employment, health and wellness, and e-government as some of the benefits that the public have in America from access to U.S libraries.

2.11.1. Social connection

According to Becker… et al (2010) sixty percent of the public access computer users reported using library resources to maintain person connections. Among these users, 74 percent reported using library computers to connect with friends or family, 66 percent communicated with family or friends in the local community, and 35 percent reported connection with family outside of the United States.

2.11.2. Education

Becker …et al (2010) further shows that forty-two percent of the library computer users (an estimated 32.5 million people) leveraged the library technology resources to help them achieve their educational goals. For example, nearly 37 percent of these users relied on library computers to learn

about college degree or certificate programmes. Youth relied heavily on public library computers and internet access: 42 percent of 14 –18 year old respondents reported using library computers to do schoolwork. Twenty-four percent of the education users reported taking online classes or worked on online assignments at the library. Even in Ngaka Modiri Molema District, the members of the community are using the library computers and internet for educational purpose.

Dr Mbambo- Thata (2013) indicates that advanced technologies and changing roles enable libraries to tackle matters of disparity in education and information access. The Executive Director of the University of South Africa library, Dr Mbambo-Thata (2013) has supervised many creativities and programmes aimed at bridging the digital and learning divide among the patrons of the library. During the conference, Dr Mbambo-Thata clarified how text-to-audio easy reader devices and mobile library units, furnished with a lot of electronic books, electronic journals and electronic documents, have amplified access to information and library resources for disabled students and those in isolated regions. The library also used freely available social networking services such as Facebook, Twitter and blogs to make sure students are able to get the most accurate information on library services (Mitchell, 2013).

Digitisation is transfiguring the manner in which the University of South Africa Library works: in the year 2013, Dr Mbambo-Thata exposed the library's electronic budget that has surpassed its print budget. Alongside the high-tech stock management and the self-service systems, these advanced technologies have freed up the epoch of library staff, who are now able to commit themselves to offering the best probable service ever to the library's patrons.

Oladokun (2010) states that "not only are students found everywhere and anywhere; in metropolitan areas and remote locations; partaking their studies and receiving their degrees, geographical limitations between nations no longer have significance in the new world of learning." As the new education paradigm irreversibly changes the way in which teaching and learning is done,

the application of contemporary educational information and communication technologies has an authoritative role to play. Like in other countries, people in Botswana are students of multinational or cross-border education disseminated into numerous corners and crevices of the nation, even as many others conscript for the home-baked distance learning programmes from their various places.

In the same manner as frontal conservative students, distance learners also have information needs which have to be encountered. But then, standing against the distance learners' and achieving their information needs is the issue of digital divide, which furthermore disregards the underclass of the information poor. According to Oladokun (2010), "the paper speaks to the efforts of Government of Botswana to ensure nationwide access to information communication technology, which now establishes an effective tool to meet the information needs". The aspects obstructing easy access are also brought into focus. The results of a pragmatic study depicting some learners as information rich and others as information poor, and the results of distance learners studying on both sides of digital divide, are deliberated.

2.11.3. Employment seeking

Becker …et al (2010) again shows that 40 percent of the respondents (30 million people) used library computers and internet access for employment or career purposes. Among the employment users, 76 percent used a library's computers or Internet connection specifically for their search for job opportunities. Sixty-eight percent of the users who searched for a job submitted an application online. Forty six percent or the employment users used library computers to work on their resumes. Twenty three percent of the employment users obtained job related training. Generally, public libraries are used for much purpose including for searching for employment. People even in Ngaka Modiri Molema are perhaps using the library computers and internet for such purpose.

Computers are regarded as learning equipment especially in the public libraries. The information professionals offer short courses on the basic computers skills. This is aimed at providing the users of computers with basic skills to use for typing academic or personal documents, research, access to social media, access to computer games and for sending and receiving e-mails.

The Library Council of New South Wales in Australia (2009) conducted a study of their libraries to determine how and if they withstand their societies. Ten case studies were conducted and 2000 people were surveyed. The study found: 64.5% of the people interviewed said that the public library commonly improves their quality of life; 16 % claimed that it had enabled them to improve their computer skills; 14 % said that the public library made them more prolific in their jobs; 8 % said that it aided them get a new job or a promotion; and 70 % claimed that public libraries help to facilitate job or career planning.

2.11.4. Health and wellness

The study by Becker …et al (2010) indicates that overall, 37 percent of library computer users, an estimated 28 million people, focused on health and wellness issues, including learning about medical conditions, finding health care providers, and assessing health insurance options. Many of these people (83 percent) reported doing research about a disease, illness, or medical condition; 60 percent logged on to learn about diet and nutrition; and 53 percent used the library computers to learn about a medical procedure.

Roughly half of the people who used a public library computer to find doctors or health care providers reported that they made follow-up appointments. Among the people who reported researching diet and nutrition issues online at the library, 83 percent decided to change their diet. Among users who searched for exercise and fitness information, 84 percent decided to change their exercise habits.

2.11.5. E-government

For more than 26 million users, libraries serve as the neighbourhood based extension of a government agency, linking users to government officials, programmes, and services. Among these users, 60 percent logged on to learn about laws and regulations, 58 percent reported using a library computer to download government forms, and 56 percent reported logging on to find out about a government programme or service. Fifty-three percent of these users (over 13 million people) reported that they sought help from specific government official or agency (Becker …et al 2010).

The most significant findings of the study are that the public libraries' pliability in being able to achieve the extensive variety of a miscellaneous community's needs notwithstanding all the evidence of the optimistic impacts of public library information technological resources. The peril of focusing on just the delivery of access has to be accentuated again. Kinney (2010) quotes many examples of how people without information technology resources and the internet access at home continue to be underprivileged. He claims that the poor quality of the public access services, the time constraints and the persistence by some libraries on library membership all strive to uphold digital divides in North American Society.

2.12. The role of public libraries in providing access to computers

Computers and the internet in the public libraries cater the following:

2.12.1. Access

Instant development of the internet sets the tendency to offer the internet resources for libraries and patrons along with library's essential services. The provision of computers and the internet in public libraries become essential because they help to bridge the digital divide in South Africa and across the world. Public libraries provide equal access to both the have nots and haves as an essential step to close the information disparity amongst the information-rich and information-poor. Even those who are affected by the

socio-economic aspects such as poverty and illiteracy are provided with free access to computers and the internet and as such public libraries play a fundamental role in bridging the digital divide (Kulak, 1998:22-57).

2.12.2. Services

Public libraries utilize the internet to support their essential functions and services: acquisitions, circulation, and reference, cataloguing and providing access to the internet as an autonomous service. Public libraries in the cities offer identical services to those in the rural communities through the utilization of the internet. Therefore, the provision of similar library services from both urban and rural communities is a clear indication that public libraries play a vital role in bridging the digital divide. Library patrons in the rural communities are able to research, send and receive e-mails, play computer games, access social networks, and receive and send faxes through public libraries computers and the internet (Darries, 2003:67).

2.12.3. Training

According to Dunsire (2000), "training of the internet use for library staff and users is another constituency of the public libraries". Education and public libraries arrangements are particularly keen to provide such services. However, due to the variety of users in the communities, it seems difficult for libraries to cope with training issues. Darries (2003) examines the internet training programmes for elderly people to bridge that part of digital divide and reveals that 78% of public libraries do not provide the internet training, particularly for the elders due to lack of staff and funding. Public libraries provide important services by providing training to patrons who utilize the computers and the internet in the public libraries as a way of bridging the digital divide in South Africa. Those who lack the skills to utilize the computers will be loaded with the skills to use the computers just like those who have high internet usage skills (Jones, 2005:76).

Studies have been conducted demonstrating the effectiveness of access to computers in the digital age. This refers to computer and the internet services that are provided in public libraries as a means to bridge the digital divide. These include the studies conducted by Seyed and Alireza (2008), The Library Council of New South Wales in Australia (2009), Baran and Anderson (2011), Omekwu (2006), Oladokun (2010), Mitchell (2013) and Mphidi (2004).

Seyed and Alireza (2008) look at the role of librarians and information professionals in bridging the digital divide in the third millennium. The purpose of this paper is to show how the digital divide has become a mere metaphor inventing from now nearly obsolete expressions such as information have and have nots and information rich and information poor. The paper focuses on numerous dimensions of the digital divide that relate to service as well as the accountabilities of public libraries. The paper places prominence on the role of the information professionals in bridging the digital divide by demonstrating some features correlated to it as evidenced in the literature pertaining to its definition, dynamics, and the internet users.

The results are that public libraries are treated as one of the main societal resources which can solve the information divide engrained in the digital divide and contribute to the comprehension of the democratic communities. The limitation of the study is that this article revolves around the authors' points of view (Seyed and Alireza, 2008).

Baran and Andersen (2011) conducted a study on helping to bridge the digital divide in Romania looking specifically into how IREX's biblionet programme and Romania's public libraries increasingly afford access to e-government services to digitally excluded citizens. Biblionet programme is a five-year undertaking that aims to help Romanian public libraries to provide better services to their communities through a countrywide system affording training, computers and free internet access. Through a partnership between IREX, the National Association of Public Libraries and information professionals, local and national governments, and libraries throughout the country, the Biblionet programme assists to nurture the improvement of a modern public

library system in Romania as a step towards refining the socio-economic conditions of its citizens.

To attain this aim, Biblionet is emerging a network of public access computer resources in 2,000 Romanian public libraries, supporting libraries that prioritize public access to information, training information professionals to become specialists in acclimatizing new technologies to meet the community needs, inaugurating 41 county library training centres to provide the Romanian public library system a training equipment, and consorting with the National Association of Public Libraries and Librarians (ANBPR) to assist the association to establish maintainable administrative patterns to resort to the new and changing needs of contemporary libraries.

Omekwu (2006) conducted a study on managing information and technology and concentrated more on the critical roles of librarians in developing countries. The research paper sets out to offer a fundamental impression of the involvement of information technology to the contemporary swing from information to knowledge dispensation. It posits shift in the context of the management challenges for information professionals from the emergent countries. The results of this study show the terrible state of the internet usage and information technology resources in Africa in certain ways and the rest of the emerging countries in general. Information professionals will be engaged to provide accurate information, develop strategic associations, partake in network activities and contribute to the bridging of the digital divide. Librarians will emerge as technology experts, researchers, information analysts, knowledge pioneers, editors, information navigators, gatekeepers, information brokers and asset managers. Decisively, information professionals will need to attain new skills to access the internet resources, and advance new strategies and services to meet the tests of the knowledge age. The findings and deliberations suggest that it is vital for information professionals from the emergent countries to start to re-evaluate their roles in terms of how they contribute to the management of technology and information in the knowledge era. "They must contribute in information and knowledge formation, undertake information resources documentation,

provide information identification service and evolve new means of resource conservation" (Omekhu, 2006).

The paper presented by Mitchell (2013) at the beginning of the African Libraries in the Digital Age Conference, Darren Hoerner, the Programme Director at the Bill and Melinda Gates Foundation and conference chairperson, indicated that libraries are reaching outside their walls. According Mitchell (2013), reaching out refers to changing shape and developing new forms were surely the habitual themes of the conference, as speakers from all over Africa alluded their involvements and experiences and their studies of how libraries in Africa are acclimatizing to the needs of their patrons in 2013.

At the same conference, the first presenter was Deborah Jacobs, Director of the Global Libraries programmes, who started by making the case for libraries as crucial ever-existing community podiums for improvement that possess the buildings, staff and services required to spread through their local societies. She emphasized exciting occurrences of libraries spreading their services beyond the loaning of books. In Uganda for instance, the Busongora Community Library offers an SMS service and a radio slot. It also offers training measures and procedures to more than 500 farmers in the district. In South Africa, young group of people living in disadvantaged areas of Cape Town get computer and the internet training and proper access to further training and employment opportunities through their library's advanced internet connectivity.

Presenting on the position of libraries in Namibia, VenoKauaria, Director of the Namibia Library and Archives Service (NLAS), showcase the achievement of the Ministry of Education in its attempt to safeguard the indispensable improvement impact of libraries in the national agenda. Throughout the consultations with the Prime Minister, the Ministry accomplished the capability to utilize a portion of its library budget, which was before kept for books only, to buy information technology infrastructure. Most libraries in Namibia hire at least one trained information professional. According to Mitchell (2013), Kauaria was quoted as saying "We told ourselves that we have to be appropriate", clarified Kauaria, pointing to the NLAS's dedication to align itself

with the national development goals of poverty, unemployment, health and education."

Kuauria's opinion was resonated by Agnes Akuvi Adjabeng of the Environmental Protection Agency of Ghana, who supported the utilization of social networks and the internet by library services:

> "Libraries have to come up and be perceived as providing relevant information to the communities in Ghana", she said, "Nowadays, our patrons do not come to the libraries, it is necessary that the information professionals take double steps to make use of the resources available to the libraries to reach out to the patrons".

Charles Kamdem Poeghela, Director of the Centre de Lecture Animation Culturelle (CLAC) in Yaoundé, Cameroon, discussed the powers the libraries have to influence the actions of government. Even though libraries do not have precedence over the Cameroonian government, he said, the Ministry of Culture was enthralled by CLAC's effort with information communication technological supported learning that Ministry associates visited the centre to check how they could upsurge access to and the use of information technology nationwide.

Henk Van Dam, Project Officer for Capacity Building at the Dutch Royal Tropical Institute (KIT), showcases his involvement and experiences of working with libraries in Mozambique and Ghana. He also defines the multidimensional impact of the 21st Century information professional as he had come to see it as an embedded librarian, broker of knowledge and teacher. The impact and role of libraries in the coming years is obviously one that will endure to change but, with over 230,000 public libraries situated in the emerging countries only and more involved with universities, hospitals, museums and other organizations, the influence of libraries to contrivance change on a universal scale should not be undervalued.

Mphidi (2004) conducted a study through which an attempt was made to explore the association amongst the digital divide and e-governance and to present the standard of digital divide in South Africa. The approaches utilized in this study are observation and content analysis of various government

departmental websites. The results show that the South African government departments use their websites to offer specific government services to the inhabitants.

Therefore, the South African government seems to be taking the benefit of the internet and other web facilities to offer people with access to electronic information and services. These show that the South African government has initiated proper steps to tackle the digital divide. To ensure that the efforts are improved, the paper suggests that government has to offer sufficient training to ordinary people on how to utilize computers and the internet in order to access e-governance service. Government has to tackle also the issue of human capital by making sure that knowledgeable staffs are hired to improve and sustain the e-governance service. Government should involve the industry in order to develop telecommunication equipment and resources. Government also has to help its inhabitants with access to cheap internet services so that the society is able to utilize more of e-governance services and to assign more subsidies on e-governance developments.

According to Al- Jaradat, Al- Dwari and Obeidat (2014), "developing countries are often said to suffer the disadvantages created by a 'digital divide' – the gap between the digitally advantaged and the digitally disadvantaged. Much of the attention given to the digital divide had focussed on the most severely disadvantaged countries (particularly in Africa and parts of Asia)." The study by Al- Jaradat, Al- Dwari and Obeidat (2014) looks at the concept in the situation of developing Arab nations, with emphasis on the capability of technological libraries to bridge the digital divide, as applicable to research and academic communication, and this necessitates a case study of University of Jordan. A specific attention of this research is on measuring the challenges and obstructions facing Arabic-speaking writers and researchers in their utilization of networked library and information services. That is, whereas the concept digital divide is frequently utilized as a way to express the technological disparity amongst industrialized and emerging countries, it may be that the advance divide is shaped in terms of the authority of the languages and content of the industrialised ecosphere in the networking fraternity.

The study examines the possible technological library and information services to better service the Arabic-speaking researchers, with specific reference to the amplified access to scholarly work publishing in Arabic language. It expands the policy creativities and restraints that may influence the future growth and application of technological libraries and information services for the benefit of Arabic-speaking researchers. There are currently no published studies that unpack the capability of technological libraries to address the digital divide in the emerging Arab Ecosphere. The findings of this study offer the imperative endorsements meant to refine the capability for digital libraries in Jordan and the broader Arab Sphere to endorse the Arabic scholarship.

Munster (2005) conducted a case study on the digital divide in Latin America. The purpose of Munster's (2005) study was to discuss the concept of the digital divide and its impact in Latin American libraries. The methodology/approach was to provide an overview of the situation in the region. Digital divide is seen as a universal delinquent that is augmented in the information era, an epoch in which clusters and people in communities are deprived of access to technological equipment. An example is the screening of how the library of the Universidad de San Andrés has approached this situation of the digital divide. However, the prominence of collaboration between numerous establishments is underlined as a mean to defeat the obstacles to information access (Munster, 2005).

Bishops, Tidle, Shoemaker and Salela (1999) showcase the results from an experiential study of communal information flow, computer access and the utilization of computers and the internet among low-income African-American inhabitants in one location. The data collection was done using domestic interviews, surveys and focus groups. The results signpost that, while computer utilization is trivial, various low-income societies contribute in the local expansion of networked information and library services. The paper accentuates suitable roles for public libraries in the entire community's efforts to bridge the digital divide that scratches computer utilization along socio-economic streaks.

Gomez and Gould (2010) investigated why people prefer one over the others in a survey of 25,000 people in 25 developing countries, including South Africa. They used the Real Access framework which was developed by the South African NGO, namely, <u>Bridges.org</u>. The study evaluates "access" by viewing three measures: corporeal access that is regarded as the affordability; capacity that refers to staff and patron training; and the environment referring to the socio-cultural aspects like political mandate and general support. The outcomes of the study indicate that profitable cybercafés are the greatest utilized public access points for ICT in 25 countries (73%) although libraries and telecentres are responsible for only 11% and 12 % separately of the overall usage. The writers found that the utilization of public access ICTs rely on individual's loyalty in terms of security, and significance of the information accessible and discernments of coolness. Public libraries are viewed as the most trustworthy; telecentres are also viewed as offering the most pertinent information, and cybercafés are also viewed mostly as "cool".

> The coolness of the cybercafés comes from aspects like unlimited internet access, welcoming staff and the sensation that the environment is a friendly place. Telecentres and libraries habitually block social media usage and inspire not hanging out (Gomez and Gould, 2010:251-261).

2.13. The role of libraries in bridging the digital divide

Different libraries such as the national, academic and public libraries play a crucial role in bridging the digital divide. Nevertheless, this study focuses on the role played by public libraries. But all LIS sectors role in bridging the digital divide is acknowledged in this study. Becker ... et al (2010) note that free access to computers and the internet in the United States public libraries evolved from a rare commodity into a core service. Rao (2000) claims that "digital divide or gap is purely a lack of physical access and training that is nevertheless offered in the public libraries all over world". The explanation of this problem is justly forthright: the role of public libraries is to offer access and training. In other words, the gap will in a certain period correct itself, for as long as public libraries across the world provide access to computers and

the internet as a way of bridging the digital divide (Robert, 2004:4). However, according to Sigh (2001:32), "what national libraries do is to aid in narrowing the digital divide and it will rely on aspects such as their basic orientation such as the tradition, infrastructure and national service, their equipment, and their power to influence the national system and the role of the library and information services". Sigh (2001) deliberates on the following as an attempt to recognize national library roles relating to the nine proportions of the digital divide:

- **Capacity**: National libraries in most emerging countries experience a severe scarcity of information technology staff and are improbable to make a national contribution in this reverence. Even national libraries in more industrialized countries are not always in a position to entice and preserve highly skilled information technology staff. Conversely, national libraries that are able to access resources such as scholarship make a valuable contribution in research and improvement.

- **Content:** It is a zone in which national libraries make a key influence, the focal thrust which adds to the critical mass of national content existing on the website. A simple way to do this is to make the national library's online public access catalogue (OPAC) accessible on the web, thus is giving bibliographic access to its collections and to the national bibliography, periodicals index and databases. An additional and more momentous step is to offer electronic full-text content through computerization features concentrating on the national heritage. This refers to the documents of historical prominence, historic printed works, charts, pictures, sound recordings, and motion pictures. National libraries in the industrialized countries are already accomplishing this on a higher rank.

An advance role for national libraries is one of offering national portals to digital information resources, with emphasis on information appropriate to their countries. If the resources are prudently assessed, designated and prepared, such portals can add value by impeccably assimilating quick and influential access to a vast range of resources,

in effect creating a virtual library (Jackson, 2002). "In Europe work is under way to do this on a continental basis (Brindley, 2001)." In the emergent countries, national libraries have a specific responsibility to add to the digital content on the internet, to make sure that the indigenous languages, cultures and apprehensions are reflected there.

However, in emerging countries with inadequate resources, programmes have to be selective. The selection of materials for digitisation should be inputted to traditional, custom and nation-building objectives and school syllabuses, and should include documents now apprehended by former foreign authorities. Additional classification of documents to be considered for digitization in developing countries is legislation and government information. "It is suggested also that national libraries can add to local content by recording, documenting and digitising oral history and indigenous knowledge" (Mutula, 2002).

Oral history is not exceptionally significant in the developing countries. Lately, much effort has been placed on indigenous knowledge in the developing countries and in developed countries with populaces of "paramount states". Indigenous knowledge is local knowledge, different in every society, where it customs the foundation for civic decision making and problem solving in the following sectors: agriculture, health care, food preparation, and education. It is difficult to codify and organize a tacit knowledge that is embedded in community practices, institutions and rituals (Jackson, 2002). It has also been recommended that indigenous knowledge can be made a subject to legal deposit. National libraries should therefore play a crucial role in the conservation, availability and appreciation of indigenous knowledge, and that is, national treasure which has been overlooked and underestimated (Jackson, 2002).

To enhance the intricacy of the above responsibilities, the national library should not avoid the country's electronic heritage of born-digital material. For more journals are now being published automatically. The national library has to collect these and make sure they do not dissolve

from the internet after years. Websites are an imperative reflection of national politics and culture, but they are very momentary. Already, much of these documents have been lost, both in industrialized and emergent countries (Jackson, 2002).

- **Community:** National libraries have accountability to ensure that their services imitate the needs of the full range of their communities. This means that the content provided in electronic format should be in all the country's languages, and should be pertinent to minorities and underprivileged clusters, comprising the illiterate and recently literate. In various countries library and information services to the blind or visually impaired are offered by the national library. Innovative digital technology may open more prospects for the patrons with disabilities. To offer these prospects will require the national library to make an investment in advanced hardware and software. In several countries the national library may be tasked with promoting literacy or information literacy by collecting, assessing and making accessible literacy resources, developing, piloting and coordinating literacy initiatives, promoting indigenous writing and publishing, coordinating book improvement policy, and marketing information literacy. Not all of these projects are directly pertinent to the digital divide, but it has to be borne in mind that illiteracy is the greatest obstacle to partaking in the knowledge society.

- **Finance:** It is very rare for the national librarian to have enough money to spend. However, in many cases, national libraries have the capability and proficiency to offer guidance and management to a cluster of libraries by putting forward a funding proposal to international sponsors. The national library also plays an advocacy role, serving to influence government to make more subsidies accessible to the nation's libraries and information services. This will entirely depend on the position of the national librarian, and on how the national library interacts with organs of state.

- **Business environment:** National libraries do not seem to have a specific role to play in the business environment. Though they have to

be adjusted to the business environment of their countries, if only to be able to offer suitable information and library services to the private fraternity.

- **Legal/Regulatory environment:** The national library may be able to play an advocacy role in the legal environment, coordinating contributions from the countries other libraries and information services centres, and putting forward well-motivated proposals for proper modifications to laws and regulations. Pertinent areas would embrace taxation, trade barriers, telecommunications tariffs and intellectual property.

- **Policy framework:** The national library should play an advocacy role in the process of formulating policies. Moreover, the national library should play a headship role in engaging the country's library professionals to partake in national information and knowledge society discussions and programmes. In many emerging countries, public information agencies utilize modern information and communication technology, including information kiosks, tele-centres, and multipurpose community centres (Mutula, 2002). The national library needs to take the lead to ensure that libraries in their countries do not miss golden opportunities to assist in bridging the digital divide.

- **Moral/ethical framework:** The national library should play an advocacy role in inculcating morals and ethical values in the society. It should provide national guidance and leadership in the marketing and protection of freedom of access to information and to freedom of expression. In its provision of services to its patrons and in its management, especially human resources management, the national library should set an example by applying sound democratic and ethical values.

However, public libraries are recognized long time ago as imperative players in the task of balancing computer and the internet access in the communities. In the year 1993, then United States Vice President AL Gore recommended that public libraries could function as a security net in offering the internet access, and then President Bill Clinton, in the year 1994 state of union

address, professed his obligation to connect every classroom, every clinic, every library and every hospital in America into a national information superhighway by the year 2000 (Moore, 2001).

Over and above, there are many studies that determine the role of libraries across different LIS sectors in bridging the digital divide. These comprises studies by Melissa (2014), Society of Chief Librarians (2014), Thilman (2015), Obeidat (2015), Shuva and Akhter (2011), Williams (2000), Howe (2015), and Ogochukwu (2011).

Melissa's (2014) study focuses on how rural and suburban libraries bridge the digital divide, and finds that nearly all of the nation's public libraries provide their communities with WI-FI, vast online resources and technology skills training. The Harrison County Library System exemplifies the outcomes of the American Library Association's Digital Inclusion Survey, which reveals that almost all of the countries' public libraries offer their societies with access to computers and the internet, electronic databases and computer training courses. The survey also reveals a plain divide among some of the digital resources accessible at public libraries. For example, 19% of rural libraries have the internet speeds of 1.5 megabits per second or slower, while only 2 % of urban libraries do (Melissa, 2014:101).

Other surveys offer support to the above outcomes. Weiss's study in the USA (2012), for instance, highlights the importance of public library information communication technology to families with low income, and uneducated people who do not have computers and the internet in their homes. He further states that public libraries are the third most prevalent place to retrieve the internet after schools and workplaces, which have restricted access to the internet. Just like Kinney (2010), he claims that it is useless that people gain free access to computers and the internet if they cannot utilize them profitably. Oladokum (2010) proposes that people will not utilize a technology, even if it is provided to them for free, if they do not know how to utilize it.

A study by the Society of Chief Librarians (SCL) (2014) points to unique role of libraries in bridging the digital divide. SCL digital survey points to unique role for public libraries as physical spaces for retrieving digital knowledge and

opportunities. SCL's recent research outcomes on digital leadership skills is the outcome of a four month survey that has involved more than 200 existing heads of libraries and the coming future library managers. It will now encourage SCL's work to empower public libraries to reinforce their role as the only global reachable public space where everybody can retrieve digital knowledge and opportunities. The study recommends that this exclusive role is becoming more important, not least to overcome the digital divide. SCL will also offer support to reinforce digital leadership guidance and skills within the segment. In March 2014 collective intelligence was commissioned by SCL, which was sponsored by Arts Council England, to recognize major digital improvements on the horizon, and to determine the prevailing expertise. Future library managers have to reply to these. Communal intelligence also accomplished an audit of digital leadership expertise amongst current and upcoming library managers.

The survey contains a sequence of endorsements with which SCL is now continuing. The Digital Leadership Skills survey showcases strong expertise on basic leadership challenges of managing change and intricate programmes but disparities for certain managers on emergent challenges about self-publishing and probable opportunities such as offering new electronic learning resources via public libraries. It also presented that while certain library managers are well-maintained to exploit the advantage that digital technology can bring, there are disparities in knowledge, and for some, about who in their societies lacks access to the internet, and the intersection amongst the digital divide and communities who have not yet been reached by libraries.

According to Thilman (2015) (the 11th annual aspen ideas festival) drew remarkable crowds to the picturesque Colorado mountain town in late June, encouraging spectators to participate in their curiosity. In a discussion with The Huffington Post's editor-in-chief Arianna Huffington, New York Public Library president and CEO Tony Marx, addressed the issues of the digital divide in America, where an estimated 60 million individuals are without access to computers and the internet service, and the role of public libraries amidst changing scenery.

Obeidat (2015) conducted a study on investigating the role of public libraries in reducing digital divide in Jordan: using computer and internet. A quantitative research method has been employed in this study. 110 questionnaires have been administered haphazardly to participants at two public libraries. Certain questionnaires have been administered at one of the divisions of the library. Most participants fulfilled the appeal for instant completion and returned the questionnaire. Ninety percent of the questionnaire forms, which equals to 100 forms, were completed and returned. The results shows the actualities of a digital divide, but also proposed that the accessibility of computers and the internet have helped the society to defeat the information divide and improve its philosophy. The survey utilized a quantitative method and SPSS analysis for determining the digital divide and its effects on the patrons of the public libraries in Jordan.

Shuva and Akhter (2011) remark that in Bangladesh, the industrialized and emergent nations are fighting against digital divide so that they keep the wheel of improvement progressing, and run away from the malicious circle of poverty as the digital divide is the main feature that leads to poverty in many nations. In Bangladesh, for instance, the digital divide situation is unembellished. It is therefore, significant for Bangladesh to take major steps to bridge the digital divide and to make sure that there are information communication technology resources at the national level. Lately, as government promised to change Bangladesh into Digital Bangladesh by the year 2021, which is the golden festivity year of Bangladesh liberation, numerous programmes have been implemented to defeat the digital divide and to produce future competent generations.

Conversely, it has been perceived that no worth stating programmes has been implemented by government that confirm proper improvement of public, school and college libraries and information centres. Government should also notice the fact that the comprehensive improvement of the country is never imaginable, except that people quintessence library based education. It is not conceivable for government to make sure that there is computer with the internet connection to each and every family in Bangladesh. But it is possible

to make sure that there are information and communication technological resources at school, college and public libraries.

The researchers strongly believes that ensuring access to information and communication technology to public, school and college libraries will prominently lessen the digital divide at the national level, and will produce qualified, proficient, technology knowledgeable future generations. In this survey, an effort has been made by the researchers to indicate the prevailing digital divide in the country, current information and communication technology consequence and core programmes that have been implemented by government, non-government, donor organizations and other improvement institutions. The focal object of this survey is to indicate how public, school and college libraries can lessen the digital divide at the national level. It is assumed that coordinated, long-term, and operative programmes that lessen the digital divide will make sure that there is a diplomatic, educated, qualified, information and communication technology knowledgeable future generations.

Williams (2000) notes that in the mid-1990s information and communication technology reverberated, allowing prompt and universal distribution of information to those with access. Nevertheless, the prompt transfer of information benefits to the industrialized countries more than the emergent ones provides escalation to concerns of a digital divide. Aquatic library and information services are just as topical to the digital divide as other accomplishments and suppose more since, in the developing countries, aquatic resources segments such as fisheries are often economic programmes of the peripheral poor that obtain slight courtesy.

Howe (2015), on the other hand, indicates that public libraries are those pillars of the society which serve and support every individual in the community. It does not matter what the individuals are looking for, whether they are seeking specific information for assignment or looking to elope into another country or time, the library has the society needs.

Ogochukwu (2011) assesses the impact of public libraries in bridging the digital divide in Delta State. The paper appeals for the implantation and establishment of applicable resources and other pioneering procedures like

the introduction of suitable computer associated programmes in schools, reassuring the community to enrol in science and technology careers, embanking on awareness activities, and setting up regional and local information resource centres by government, particularly through the usage of the internet. The challenges of digital divide is also exposed. The survey concludes that except correct actions are taken in Delta State and Nigeria, they will be downgraded to the background in this knowledge and information age.

2.14. Impact of public access computers on public libraries

The delivery of free access to information and communication technology impacts on public libraries in various ways. It is public knowledge that those public libraries have played a significant role in lessening the decline of visits to public libraries in the US, and has fascinated new patrons (Shuva, 2005: 159). Kinney (2010:135) quotes the results on the benefits particularly to rural libraries in the United States like increased usage, greater prominence and increased job satisfaction. But the picture might be different in the emerging countries because of a lack of sponsors, expert workers and other logistical issues.

It is also indicated that free access to public internet in public libraries has led to two sets of questions: how it impacts on information professionals' traditional mission in communities and on their prevailing procedures and services. Others hold that it will renovate libraries and others view it as an extension of their cultural educational and informative role. Kinney connects these questions to a bigger question over the significance and endurance of libraries in the information and knowledge age. The growth of movable access to the internet in South Africa to 33.1% might contribute to this speculation. However, the studies above in the US and Australia have indicated that even people with access outside the library choose to utilize it. Kinney's role is to examine three roles for information professionals: guides to and teachers of the internet; providers of a rich range of services beyond the internet; and

providers of the internet access to a diverse range of people who might not otherwise have such access.

In his journal article on managing public access to the internet in public libraries, Sturges (2002) states that the management of public access to information and communication technology is a normal role of public libraries. But he detects three particular challenges (Sturges: 2002: 12):

- **Accountability:** the individuals who pay for these services to be accessible will need information and communication technology services to be offered in a classified manner with the results that can be measured.
- **Technical support:** this refers to the workplaces, terminal and network resources that need technical support as they are much more complex than just switching on and off a terminal.
- **Personal support:** this refers personal support and guidance that is needed for patrons to make effective usage of the resources.

All three of these challenges, and the new demands of library staff are mentioned often in the studies that were covered in the previous sections. Kinney (2010:135) covers two main issues for management: managing with the high demand and controlling unsuitable usage of the information and communication technology. Researchers indicate that there are risks of someone utilizing library computers and the internet to search for illegal and inappropriate documents which can cause political scandals. Policies and procedures should therefore be established and implemented to manage the usage of computers and the internet in public libraries, and the staff must be educated in the issues thereof. Researchers also indicate that negligence on these issues can be possibly costly for a library when it has breached the policy. But in Chisenga's study (2007: 117) of 122 public libraries in Sub-Saharan Africa, only seven had a policy for computers and the internet usage.

Many more studies have been conducted which determine the impact of public access computers on public libraries and information centres as a way of bridging the digital divide. This refers to the studies by Kinney (2010),

Chowdhury (2013), Tamakloe (2014), Bertot, Jaeger, Langa and McClure (2006) and Andries (2009).

According to Kinney (2010:161), "every public library in the United States offers public access internet computers as a role fundamental to its mission". This article tackles the reason why the internet matters for public libraries, in terms of its impacts on the general public, predominantly the digitally underprivileged. Since this study is divided into two parts, each part of this survey starts with a broad literature review, followed by a data analysis section. In part one, the researcher utilizes the 2000 United States Census dataset to assess library determinations to bridge the digital divide, by scrutinizing variances in the development of public terminals in library systems serving regions with unique levels of domestic income, families in poverty, non-white homes, and non-English-speaking families.

The examination finds no inequality in the number of public computers accessible in areas with high and low incomes, but reveals a substantial and spreading inequality in the quantity of computers accessible in communities with a higher and lower percentage of non-white and non-English-speaking families. In part two of the survey, the researcher utilizes a haphazard effects linear deterioration model to estimate the impact of the internet access on library use. This analysis reveals that having the internet terminals against having no the internet terminals has a substantial effect on a library's visits and reference transactions, however not on a library's circulation. An upsurge in the number of the internet terminals has no fundamental effect, positive or negative for that matter, on visits, reference transactions, and on circulation (Kinney, 2010:150).

Chowdhury (2013) remarks that recent improvements in information and communication technologies have, while making our life easier and interesting, created a social divide that is known as the digital divide. Figures indicate that there are significant discrepancies among the populace in the industrialized and emerging countries in terms of the availability of, and usage of information and communication technologies. Research and improvement in digital libraries do not only demand improved information and

communication technology, but they also appeal for an enormous investment in terms of the monetary and intellectual infrastructure. Developing nations are still behind in electronic library research and improvement due to the prevailing digital divide and lack of proper resources and equipment obligatory for research and improvement in digital libraries.

As a result the patrons in the emergent countries are being deprived of digital library and information services. This survey claims that some recent universal digital library improvements can be utilized by patrons in emerging countries, and therefore, digital libraries can play a momentous role in bridging the inequality. These improvements embrace the subject doorways, electronic reference services, free access to electronic journals and electronic books, and electronic print archives and free digital libraries. The paper concludes with an action plan that may be utilized by library and information professionals in both emerging and developed countries to adventure the effects of these digital information resources and services, and thus to some extent, bridge the disparities of the digital divide.

Tamakloe (2014:8) states that "computer and the internet expertise are obligatory subjects for Junior High School learners who are between the ages 11-16 years in Ghana". Nonetheless, many schools do not have computers, the internet connectivity and electricity, and so the learners are unable to practise and as a result, fail their information and communication technology examinations. The cost of failure for children from poor families is high, and as a result, their parents take them out of school. Without ICT expertise, they are also unfit to participate in the job-market, and their future also becomes uncertain. The aim of this survey is to showcase the involvement of Volta Regional library in conveying new educational opportunities to school children from rural and poor communities via mobile library information and communication technology services. The library journey to five schools in a van equipped with solar power, brought fully-charged laptops for the children to utilize during information and communication technology classes. This service was established with advocacy of EIFL's Public Library Innovation Programme (PLIP), and is one of the 18 innovative services that have been advocated by EIFL-PLIP since the year 2010 in Africa. The survey draws

conclusions assembled on the achievement of this library and information service, and considers opportunities for improvement in the same service for children and young adults in other communities of Ghana and globally.

In Ghana the effects of public libraries in societal and monetary improvement have not been identified by the government, hence government's incapability to establish the delivery made for them in the Education Strategic Plans. Ghana has ten regional libraries and fifty-one branch libraries, and 216 Metropolis, Municipalities and Districts which should all have libraries (Tamakloe, 2014:101). Numerous public libraries were built with the support of compassionate people or clusters, but many have stopped operating because outside subsidy was exhausted, and the Metropolitan Municipal and District Assemblies can therefore no longer maintain them. Public libraries have not been acknowledged by policy-makers as places that could be utilized to grasp a broader populace of learners with information and communication technology more expediently than the specific schools. In the year 2010, the Ghana Investment Fund for Electronic Communications (GIFEC) initiated a cooperative agreement with the Ghana Library Authority (GhLA), which supervises the public library service in Ghana.

The GhLA-GIFEC partnership objectives are to reach underprivileged societies, including school children, with information and communication technology by using the prevailing Mobile Library Service. GIFEC, formerly Ghana Investment Fund for Telecommunications (GIFTEL), was established out of the Ghana ICT policy for Accelerated Development (ICT4AD) as an executing agency of the Ministry of Communications in January 2004. Financial resources for the functioning of GIFEC are offered specifically by the telecommunications service providers who, by law, are supposed to donate one percent of their profits yearly towards the functioning of GIFEC. GIFEC is instigating 13 programmes to meet its aim. The programmes involving the GhLA are the Library Connectivity Project, under which GIFEC aim to furnish all public library service points and the Mobile Library Service with computers and the internet connection. The programmes have so far furnished all ten regional libraries with ten computers, and are connected with the internet, and photocopier machines to run the Regional Digital Library, six Information

Centres, five computers, six collapsible tables, chairs and a router were put on the Mobile Library Van to run the Mobile Digital-Cottages in two aviator districts in each province. GIFEC was to provide the same resources supplied to run the RDLIC to all fifty-one branch libraries by the year 2012. As at the end of the year 2013, only 26 libraries were connected, with minor challenges. This context offers the backdrop to Volta Regional Library's mobile computer classes in Ho Municipality.

The Volta Regional Library supervises eight local libraries, and functions as a public library for Ho Municipality. This is done through motionless libraries in nine districts and mobile library services in some societies in three districts, including the Ho Municipality. A cycle of poverty occurs in most rural societies of Ho Municipality. This is compounded by the lack of school and public libraries and contemporary information and communication technology resources, which preclude children and adults from refining their education.

The main purpose of the programme is to assist children to pass their exams. A second aim, which is equally significant, is to enable the learners to research and access quality information for the community to develop. Learners are therefore invigorated to become mediators of change in the society. The funding sustained the procurement and connection of a solar panel unit on the mobile library van to charge laptop computers, procurement of five robust netbook computers, computer management software and educational software correlated to the school curriculum.

A digital library has also been installed to offer the children with access to extra assets to build literacy capability and to intensify opportunities for research. The library also procured collapsible chairs and a public address system to address children, whereby some classes had over 90 children when combined and a digital camera to record the development of the programme. The mobile library personnel and two teachers from each of the five beneficiary schools were trained in a two-day capability building workshop to utilize the educational software and the e-Granary. The information technology agency called TechAide was contracted to offer technical support and training. Two more mobile library personnel also had undergone extra

ICT and educational skills training. A sequence of meetings were held with school children, teachers, parents and community members, including chiefs prior to the provision of the services so that the community get to know when and how the projects will be provided.

The mobile library service has been in progress since the year 2012, targeting the schools in under-developed parts of the municipality, which are as follows: Ziavi Dzogbe, Ziavi Lume, Klefe Achatime, Deme Fiave and Taviefe municipalities. Certain schools in the municipalities mentioned above do not have electricity and computer laboratories. In less than a year the Volta Regional Library mobile library van journeyed to five schools, visiting each school once in a week. 105 computer lessons we conducted in the libraries, building the information and communication technology know-hows of over 215 learners amongst the ages of 11 and 16 and thus increasing their potential to pass their exams. The learners learnt to utilize educational content and games on computers with simplicity. The library also trained 119 of the learners on how to conduct the internet search, to use e-mail, and to utilize the e-Granary. The outcomes of the training was important to the learners because it increased their chances of passing their exams.

To endure and magnify the library mobile service, Ghana Investment Fund for Electronic Communication (GIFEC) offered five extra computers, bringing the number of computers to ten. To add on this, with the assistance of EIFL-PLIP, the library embarked on an electronic sponsorship campaign through the universal fundraising website. About seven thousand dollars was raised, and that was enough to acquire seven more notebook computers and a printer for the service.

The programme has made the public library more noticeable in the communities in Ho Municipality, resulting in invites from certain community radio stations to the library to talk about the programmes. The usage of the mobile library service therefore, increased by 37.8% from 553 to 762 during the programme epoch. However, schools from Ho Municipality and beyond continue to request the mobile library service to be brought to them as well. The programmes also gained intercontinental acknowledgment, instigating

requests from Kyrgyzstan and Liberia for conferences on what contributed to the programmes' accomplishment.

The main challenge fronting the programme was that the library did not have enough computers because the computer ratio of the learners was very high. The second biggest challenge that frustrated learners, teachers and library personnel was unsteady the internet connectivity in rural areas. The school programme was disturbed by industrial action by teachers demanding salary modifications. The continuing challenge for the library is the cost of maintaining the mobile van and paying for fuel to permit consistent school visits. Another challenge is high demand for the mobile library service by other schools. This is because the library has only one van, and cannot meet the demands.

Bertot, Jaeger, Langa and McClure (2006) outline the results from the 2006 public libraries, the internet study and other research works that determine the impact of public the internet access in public libraries on the populations and the inhabitants that the libraries serve. The emphasis is on the significance of public library the internet access in periods of predicaments and for a variety of electronic government services at the community at large. Public access computing and the internet access in public libraries operate as a first option, first sanctuary, and last resort in a variety of predicaments and electronic government conditions, permitting the community to engage effectively in indispensable electronic government services, which are as follows: recording for Medicare, other benefits and filing tax information. With this main significance as agents of government services, public libraries gradually play momentous roles in times of emergencies, like the aftermath of a storm, in which societies depend on the public library the internet access to request aid, to locate missing family and friends, folder Federal Emergency Management Agency and insurance privileges, and begin transforming their lives. Their paper also deliberates the need to review government policy related to the role of public libraries in their support of electronic government as public libraries progressively work as agents of electronic government.

Just as the internet was beginning to enter public awareness in the year 1994, the first public library and internet study were conducted. This first survey revealed that 20.9 % of public libraries had internet connection (McClure, Bertot, and Zweizig, 1994). Consequently, biennial public libraries and the internet surveys documented the growth of public the internet access in public libraries in the United States. In the year 2004, the scope of the survey extended from technological matters and levels of access obtainable to incorporate communal issues correlated to the provision of the internet access. The lately accomplished 2006 survey further extended the inquiries into the effects of the internet access on library customers, and on the societies served by the libraries through both quantitative and qualitative data collection efforts.

The year 2006 public libraries and the internet studies sampled 6,979 public libraries based on three library demographics: metropolitan status, poverty level of their service population, and state in which they resided. The study established a total of 4,818 replies for a response rate of 69 %. Of the libraries which accomplished the study, 3,887 also responded to the following qualitative question: In the space below, please recognize the solitary most significant impact on the society as an effect of the library branch's public access to the internet. All participating libraries had the opportunity to answer the question, and the participants were able to write as long a reply as they preferred. Responses fluctuated from less than five words to more than 100 words.

To add on to the data from the 2006 survey, the writers piloted a number of interviews with public librarians regarding their electronic government interrelated accomplishments, roles, and services. Generally, the writers spoke to 43 librarians independently or in small groups serving a comprehensive variety of societies. The interviews served three primary purposes:

- Validation of study outcomes;
- Extra sophisticated information regarding electronic government and public libraries; and

- The context regarding the library's societies and the understanding of the library in the larger electronic government context.

The 2006 survey offered considerable detail concerning the impact of the internet access in the library on the neighbouring societies. The impact of the internet access on the society involved giving the internet access to individuals who would not have access, simplifying educational purposes, and assisting in employment searches (Bertot, McClure, and Jaeger, 2006). In fact, 19.4 % of libraries felt that the internet access had so many effects that the connection in itself had to be observed as a substantial advantage to the entire public. The responses about the advantage of the internet access to the whole public were regularly passionate, and pronounced the library as having been transmuted into a resource centre for the public, an important public asset, a gathering place for the entire public, or the most significant tool for our society to have access to the world of information. These responses often connected this role to a positive economic outcome the library had on the public, as well as an increased respect accorded to the library by patrons, elected officials, and business managers.

Certainly, public access computing and the internet usage in public libraries play a key role in addressing access issues correlated to a number of important life events for many patrons, predominantly concerning electronic interactions with the government. As governments at the local, state, and federal levels continue their march towards electronic government, some services are now accessible predominantly or absolutely online. As this tendency endures, online collaborations are an essential means, and in some cases the only means, of government interaction.

Andries (2009) expanded on how the Smart Cape Access Project in Delft Public Library is utilized by the Delft society, and how it is correlated to the Millennium Development Goals as set out by the United Nations Educational, Scientific and Cultural Organisation. This survey also examined the Smart Cape Access Project, as a programme initiated by the City of Cape Town to certify that access to information and communication technologies for all inhabitants of Cape Town, and how it is used as equipment for commercial

and personal improvement. The study conducted at Delft Public Library in Delft indicates that the Delft area has a high joblessness rate, high crime rate and more than 60% of those employed earn less than R1 600 monthly. These aspects, and the fact that the City of Cape Town identifies the prominence of information and communication technologies for commercial and societal growth, made Delft ideal for this study.

The survey also examined whether the information given via the Smart Cape Access programme is pertinent for maintainable improvement. Maintainable growth is on the agenda of many countries. Perceptions can be taken back as the seventies with the first United Nations Conference on the Human Environment in Stockholm, Sweden and concluding in the World Summit on Sustainable Development in 2002 in Johannesburg, South Africa. In South Africa, numerous programmes were instigated to bring information and communication technology to those who do not have access to computers and the internet, as the significance of technology to advance and elevate the quality of life is acknowledged by different role players such as government, the private sector and non-governmental organisations. The researcher viewed this as adequate reason to embark on this survey, though the scope of the survey only focussed on the Smart Cape Access Project in one public library.

The current study will find out what library computers and internet users are saying about the following: if computers and the internet in the library are accessible for free of charge; if they are equally accessible; if the internet is always connected; if computers are enough for the community and their views on the provision of such services; if the users have the necessary skills to use library computers and the internet; and if the public libraries in Ngaka Modiri Molema District offer free training in computers to library users. This will enable the researcher to determine if the public libraries in the Ngaka Modiri Molema District play a crucial role in bridging the digital divide.

As discussed in the Marist College Institute for Public Opinion report (2003) following the years of government and private funding and support, public access computers are now accessible in more than 95 % of the country's

public libraries. More than 14 million Americans which is about 10 % of all the internet consumers frequently utilize these computers. Studies as discussed under the preceding surveys approve that public access computers are prevalent and that most Americans now expect their library to offer them. According to a recent study conducted by the Marist College Institute for Public Opinion (2003), Americans believe that offering computers for public usage is one of the three utmost significant things their library can do. Between the year 1996 and 2001, library visits amplified more than 17 %, a tendency partially attributable to the accessibility of computers with the internet access.

2.15. Users' perspectives on internet services

A users' self – reported degree of satisfaction with services provided by the library is said to be a subjective measure of any public library performance (D'Elia and Walsh 1983: 109). Jayasundara, Ngulube and Minishi-Majanja (2009: 180) also note that researchers concur that service quality should be defined and measured from the customers' perspective. Therefore, users' perspectives have been used to measure and evaluate the performance of various services provided in the public libraries or a public library as a whole. Evaluations and measurements that are based on user's perspectives are also used to measure the level user satisfaction of users with the services provided by the library. D'Elia and Walsh (1983: 110) distinguish between two approaches that can be used in measuring user satisfaction, namely objective and subjective approaches. With objective approaches, the library is the unit of analysis where and the proportion of items that the library can supply in response to the user demand is the measurement of satisfaction. In subjective approaches, the user is the unit of analysis, and the user' opinions of how well the library has performed in satisfying their demands is the measurement of satisfaction. This study adopts the subjective approach, in which the opinions from the library users of public libraries in Ngaka Modiri district in the North-West Province are solicited about their satisfaction with the availability and accessibility of computers and the internet in those libraries. Subsequently,

there are some studies that have been conducted about the opinions of library users regarding the availability and accessibility of computers and internet services in their libraries.

A research by Morris, Goodman and Brading (2007) reports the results of two connected surveys of computer and internet use amongst the older populace in the UK. Their study indicate that 120 questionnaires and interviews were accomplished with participants aged over 55 years in Derbyshire and 353 questionnaires and interviews with over 50s in terms of their age in Scotland. Rates of use, computer and internet activities, and reasons for use and non-use were examined. These were backed up by four semi structured interviews with IT trainers, unfolding experiences and issues of training this age group. The outcomes show a "grey" digital divide, with many older people missing out on the benefits that computers and the internet can deliver. They also show some of the reasons why older people do not use computers and the internet more. These propose some practical ways forward, highlighting the importance of changing older people's delusions about computers, better updating them about what they are, what they can do and how they can be of actual practical use.

There are several recent studies, based in the UK and elsewhere, that have investigated Internet use by older people perceptive. Millward (2013), for example, interviewed 58 people aged 55 and over in Wigan, England, to determine the perception of, exclusion from, and barriers of access to the internet for older people perspective, while Namazi and McClintic (2003) inspected computer use among elderly people in long-term healthcare, and included questions on internet use. Selwyn (2004) interviewed 35 people aged 60 and over on concerns of embracing, non-adoption and use of ICT in the public libraries.

This formed part of a larger survey by Selwyn, Gorard, and Furlong (2005), which achieved 1001 questionnaire responses (352 of which were from people over 60) and conducted 100 interviews, exploring use and non-use of the internet in everyday life. Olphert… et al (2005) also inspected the use and non-use of the internet in the Midlands, UK, through a questionnaire review of

83 adults aged 50-85, followed up with a focus group and interviews with 20 of the respondents. In Israel, Blit-Cohen and Litwin (2004) compared qualitatively 10 older participants in ICT training sessions with 10 non-participants to elicit views on computer and Internet use, while in the USA, Eastman and Lyer (2004) undertook a random national questionnaire survey of 171 people aged 65 to 85, examining their use of and attitudes towards the internet.

Fox (2004) also working in the USA, generalised data from daily tracking surveys of Americans' internet use and complemented this with telephone interviews to determine the number of elderly people online. There has also been wider European research that includes some work on internet use by older people, such as that by Gilligan (2000); Senior Watch (2002); and), for Fox (2004) example, deliver key conclusions and policy recommendations resulting from a study of the interactions between demographic ageing and the pervasiveness of Information and Communications Technology (ICT), and include a discussion of internet use by older people perspective within this remit.

According to Europa (2005) there is common agreement among researchers that, while ICT uptake among older citizens in the EU and USA is cumulative, this age group is much less likely to be online or have broadband access than younger people and that this divide will endure for the predictable future. Internet use decreases with age. In the first quarter of 2004 nearly three quarters of those aged 16 to 24 in the EU (men: 76%, women: 74%) had utilized the internet, compared to just over half of those aged 25 to 54 (men: 57%, women: 51%), and nearly a quarter of those aged between 55 and 74 (men: 26%, women: 16%). In the UK, almost two thirds of people aged 45-54 use the internet, compared to nearly one in four people aged 55-64 and one in nine people aged 65-74. Internet usage has also been shown to correlate with level of income, education attainment and social exclusion, attributes that are often associated with older people (Wellman, 2002:221).

There is a difference perspective about the types of activities older people engage in when using the internet. Loges and Jung (2003:556), for example,

claim that older people exploit the Internet for only a small range of activities, while ICM Research found the converse. However, it would appear that the prime reason why older people go online is to communicate with their families, some surveys have also shown that older people do not appear to value online shopping (McCarthy, 2003:20).

Several studies have looked at the professed barriers of access to the internet. These appear to include: lack of interest (Mates, 2002:174), feeling too old, fear of technology compounded by rapid hardware and software development, lack of IT skills and experience, age-related functional restrictions and cost, although other researchers refute this being a significant factor. While the research to date provides insight into internet usage amongst older people, contradictions appear in the literature and further in-depth knowledge is still needed. Much of the research, for example, is based on small samples which have reported bald statements and generalisations (Olphert, Damoradan, and May 2005:108).

The study reported in this paper by (Olphert, Damoradan, and May 2005:108) aims to contribute towards addressing that gap. Although the research is UK based, the results may be generalised, with caution, to other EU countries where the proportion of internet usage is similar, for example Denmark (69.4%), Finland (62.5%), Germany (59%), Luxembourg (58.9%), the Netherlands (65.9%), Portugal (58%) and Sweden (74.9%) compared to 62.9% for the UK (Internet world statistic, 2006). It must be recognised, however, that some of the results may be bound to UK culture.

Also, in Europe, many older people, unable to speak a foreign language, may be put off using the internet where most of the services and general computer jargon are in English (Gilligan, 2000), although there is no evidence of this in the Nordic countries, particularly Sweden, where the use of the internet by older people is generally higher than in the UK (Internet world statistic, 2006).

2.16. Conclusion

In this chapter the researcher presented the literature review of the study. This chapter critically discussed theoretical framework of the study, dimensions of digital divide, measuring the digital divide, ICT and Social Inclusion, the internet usage and policy implication in the digital age, problem of the digital library development, solutions of bridging the digital divide, causes of the digital divide, benefits of computers and internet, the role of public libraries in providing access to computers, the role of libraries in bridging the digital divide, impact of public access computers on public libraries and users' perspectives on internet services.

CHAPTER THREE

RESEARCH METHOLOGY

3.1. Introduction

Chapter three presents the research methodology that was used in the study to collect data. The chapter covers issues relating to the research design, the area of the study, sampling, population, data collection method, data collection procedure, pilot study, and ethical considerations of the study. Research methodology as defined by Sarantakos (1998:98) "is a method to discover the result of an identified problem." In the methodology, the researcher utilizes various measures and standards to solve a specified research problem. Different researchers utilize various types of approaches of solving the problem. In research methodology, the researcher always attempts to search for the given question methodically in his/her own way and looks at all the responses until conclusion (Goddard and Melville, 2004:142). If a study does not work methodically on a problem, there would be less probability to reveal the final outcome. For finding or expanding research questions, a research deals with problems that can be efficiently determined by utilizing the correct research practices and methods (Goddard and Melville, 2004:145).

3.2. Research design

De Vos, Strydom, Fouche and Delport (2002:124) describe a research design as a "comprehensive proposal on how a research survey will be measured, or delineated, for piloting a survey in such a manner that a maximum control will be implemented over aspects that could inhibit the rationality of the research questions". The research design is the researcher's general plan for locating responses to the research question guiding the survey. De Vos et al (2002:126) state that designing a study assist, researchers to strategies and device a survey in a manner, which will help them, find the envisioned

consequences, thus increasing the chances of retrieving information that could be concomitant with the real situation. Social research needs a strategy before data collection or analysis can be done. A research design elaborates on what has to be done to finish the survey and how the work plan will flow to achieve the results of the study.

The purpose of a research design is to make sure that evidence obtained allows the researcher to respond to the initial question as unmistakably as conceivable. Attaining pertinent evidence involves stipulating the type of data or information needed to answer the research question, to test a theory, to assess a programme or to perfectly define a specific phenomenon. A research design deals with a rational and not a logistical problem. Too often researchers formulate questionnaires or begin interviewing very early, before thinking through what information they need to answer their research questions. "Without attending to these research design ideologies at the beginning, the conclusion reached will usually be weak and unpersuasive and fail to respond the research question" (Leedy, 2001:125).

This study adopted a descriptive quantitative research design/approach in examining the role of public libraries in bridging the digital divide. According to Babbie (1989:56), descriptive quantitative research defines circumstances, populaces and phenomena as they are, and its determination is to abridge or designate a set of quantitative data.

3.3. Two approaches to research

3.3.1. Qualitative research

According to Mouton (2001:13), "qualitative research refers to gathering, examining, and reading of data by perceiving what people do and say". Qualitative research is much more subjective than quantitative research. The two utilize dissimilar approaches of gathering information, mainly individual, in-depth interviews and focus clusters (Redman and Morry, 2009:27). The nature of this type of research is exploratory and open-ended. Minor numbers

of individuals are interviewed in-depth and a comparatively small number of focus cluster is conducted. Qualitative research is a technique of investigation employed in many several academic disciplines, habitually in the social sciences. Qualitative researchers aim to collect an in-depth compassionate of human behaviour and details that govern such behaviour. The qualitative method examines the why and how of decision making, not just what, where, and when. Hence, slighter but focused samples are more often desirable than large samples (Redman and Morry, 2009:30).

3.3.2. Quantitative research

Quantitative research refers to counts and procedures of things, qualitative research refers to the denotation, ideas, descriptions, features, reports, and signs of things. According to Mouton (2001), "quantitative research is a formal, impartial, orderly process in which statistical data are utilized to gain information about a specific research topic". This research technique is utilized to define factors, to scrutinize interactions amongst variables and to determine the causes and consequences of interfaces amongst factors. In other words, quantitative research is apprehensive with numbers, figures, and the connections amongst events/numbers. Quantitative data can be transferred into figures, in a formal, impartial, methodical process to acquire information and define variables and their relationship (Goddard and Melville, 2004:31). It is a research technique in which a researcher should have a clearly defined research question to which impartial answers are sought and all features are prudently and exactly considered before data collection. Quantitative research can be utilized to oversimplify perceptions more extensively, foresee future outcomes or examine pivotal relations (Goddard and Melville, 2004:28).

Basically, quantitative research is impartial; qualitative is idiosyncratic. Quantitative research pursues descriptive laws; qualitative research aims at comprehensive explanation. Qualitative research measures what it assumes to be a motionless realism in expectations of improving general laws.

Qualitative research is an examination of what is assumed to be an active realism. Qualitative research does not claim that what it exposes in the process is general, and therefore, replicable (Burns and Grove, 2005:28). This study has identified a descriptive quantitative research. It tries to enumerate and designate the aspects recognized as contributing to digital divide and the users' perspectives on the role of public libraries in bridging the digital divide in Ngaka Modiri Molema District, North West Province, South Africa.

3.4. The area of the study

The area of the study refers to the limitations in which the survey takes place (Mouton, 2001:182). This study was conducted in Ngaka Modiri Molema District, North West Province, South Africa. Ngaka Modiri Molema District as a semi-rural central district is one of the four regions of the North West Province. It is the home of Mafikeng, the capital city of the province. It is a developing, contemporary, inhabited, administrative and marketable area that contrasts with its captivating history. Most of the public libraries in this district were established by Ngaka Modiri Molema District Municipality but are currently funded by the provincial Department of Sports, Arts, Culture and Recreation. The district has sixteen (16) libraries which are based in the townships. However, for the purpose of this study only five (5) libraries which are proximate to the researcher were selected. These libraries include Barolong Public Library, Danville Public Library, Ottoshoop Public Library, Mmabatho Public Library and Mica Public Library. All these selected public libraries have computers and internet connection. They each have less ten computers connected to internet.

3.5. Population and sampling

3.5.1. Population

According Serantakos (1998:110), "population is commonly a huge gathering of people or objects that is the central emphasis of a technical interrogation".

It is also known as a distinct group of persons or objects recognized as having similar features. All people or objects within a particular populace generally have shared obligatory characteristics or mannerisms. A population is also defined as a cluster of people or items that share one or more features from which data can be collected and examined (Leedy, 2001:74). Population is the entirety of all matters that imitate to a set of stipulations, including the whole collection of people who are of interest to the researcher and from whom the results can be generalized.

In this research, population refers to the users of public libraries in Ngaka Modiri Molema District who were in the libraries, using the library services at the time data were collected. Hundred (100) library users from five (5) different public libraries in Ngaka Modiri Molema District were selected in accordance with the sampling method that was used in the study.

The researcher's intention was to administer 100 questionnaires for hundred percent rates of the study. So since data collection was collected in five public libraries, the researcher applied a common knowledge that those questionnaires should be divided into those five libraries that were selected to participate in this study. Therefore, that's what informed the administration of 20 questionnaires per library in the Ngaka Modiri Molema District, North West Province.

3.5.2. Sampling

According to Burns and Grove (2005:115), "sampling is the practice, procedure, or method of choosing a representative part of a populace for the tenacity of determining limitations or features of the entire populace". A sample is a percentage or a subgroup of the research populace designated to partake in a survey, representing the research populace. In this study a convenience sampling method was utilized to administer the questionnaires to the respondents. Convenience sampling is a type of non-probability sampling which includes a cluster of people being pinched from that part of the populace which is nearby the researcher (Sarantakos, 1998:125). Non-

probability sampling refers to a selection method of selecting samples using any form of standards and principles (Burns and Grove, 2005:116). It is a procedure of sampling where the contributors are designated because of their suitability, convenience and immediacy to the researcher. In a convenience specimen method, the questionnaire is administered to any accessible participants as long as they fall within the target populace. This sampling method is quick, cheap, and the subjects are readily accessible.

The quota sampling method was also applied in this study. According to Leedy (2001:231) quota sampling is a non-probability sampling technique wherein the assembled sample has the same proportions of individuals as the entire population with respect to known characteristics, traits or focused phenomenon. This method was used because in some libraries the participants especially the learners were approached by the researcher as a group since they were busy with their school projects. The researcher would then introduce himself to them and ask them to participate in the study. The advantage of using this method was that approaching the participants as a group safe time for the researcher.

3.6. Data collection method

This study utilized a questionnaire as a data collection method. A questionnaire is a research tool containing a sequence of questions and other stimuli for the persistence of collecting information from the participants (Mouton, 2001:65). The reason for choosing the questionnaire is that it permitted the researcher to gather data from a huge cluster of people in a little space of time (Leedy, 2001:124). Usually, a questionnaire is composed of two types of questions, namely, closed-ended questions and open-ended questions. Questions that can be answered with either a solitary word or short expression are closed-ended questions whereas open-ended questions permit the participants to provide a long answer to a particular question. This study utilized both closed-ended and open ended questions. Close ended questions are not time consuming and the respondents will only be required to tick the options that best describe their answers. They also enable the

researcher to easily interpret and examine the results. Open ended questions enable the participants to express themselves because they are not given answers to choose from. The researcher, in consultation with the librarians from the designated libraries, made appointment to meet with the respondents. Respondents were also invited through invitations on notice boards and through word of mouth.

Questions that were asked in the questionnaire include the following. For which purposes do library users use library computers and the internet? This question was asked because the researcher wanted to know why the library users use library computers and the internet. The expectation of the researcher is that the users will indicate that they use the library computers and the internet for research, sending and receiving e-mails and for typing. What challenges do they face when accessing library computers and the internet? This question was asked because the researcher wanted to find out the challenges that the users face when accessing the library computers and the internet. The researcher's expectation was that the users would indicate that they lacked skills to utilize computers, the internet was not available, the computer lab was closed and there was lack of enough computers in public library. In some instances, multiple answers were given. Users were also asked if they find it important for the libraries to provide free access to computers and the internet. This question was asked because the researcher wanted to determine if public libraries in Ngaka Modiri Molema District are bridging the digital divide.

The researcher's expectation was that the users would indicate that indeed computers and the internet in public libraries play a crucial role in bridging the digital divide because access is given to both the information-poor and information-rich users. Users were also asked if they are impressed with the services provided by the library computers and the internet. This question was asked because the researcher wanted to find out if the users appreciate the provision of computers and the internet in public libraries. The expectation was that the users would indicate that since most of them are only accessing the internet only in public libraries, they are therefore impressed with the

provision of free access to computers and the internet. Their age, sex and educational level were also asked in the questionnaires because these are variables that have been identified as some of the causes of the digital divide. These are demographic factors that contribute to the problem of the digital divide. Demographic information is requested because the researcher wants to determine factors contributing to the digital divide. The researcher's expectation was that the youth uses library computers and the internet more. Male users also use the library computers more than female users. Africans in Ngaka Modiri Molema District use the library computers and the internet more than white people because there is a perception that young people use computers more than older people. The other perception is that female users use computers less than males because they think computers are only for males. A copy of the questionnaire used in this study is attached as *appendix C.*

3.7. Data collection procedure

Questionnaires were distributed to the library users who were using computers at that time regardless of what they were doing. Other questionnaires were distributed to the library clients at different sections of the libraries irrespective of what they were doing in those sections. Before the respondents could answer the questionnaire, the researcher provided them with a letter or a cover page which introduces him to the respondents. The letter also indicated the importance of the study and why it was important for them to participate in the study.

Twenty (20) questionnaires were distributed in each of the public libraries selected for the study. They were distributed to the users available and proximate to the researcher when data were collected. They were collected from the respondents immediately after each respondent has completed it. According Leedy (2001:121) collecting the questionnaire immediately after the responses participates in the study helps the researcher not to lose questionnaires. This implies that every questionnaire was completed in the

mentioned libraries and immediately returned to the researcher. No one was allowed to take it home. This safeguarded the questionnaire against loss. As such there was a fair representation from each library. It took the researcher three months to collect data. Data was collected during the month of August-October 2015.

The data collected was analyzed, interpreted and recorded in tables and graphs. The relevant column and row headings facilitate easier access to information. One of the greatest advantages of tables is that when data are organized, it can be easier to spot trends and anomalies. Another advantage is their versatility. Tables and graphs can be used to encapsulate either quantitative or qualitative data, or even a combination of the two. Data can be displayed in its raw form, or organized into data summaries with corresponding statistics. The copies of the letters that were used in this study is attached as *appendix A and B.*

3.8. Pilot study

A pilot study was conducted before a questionnaire could be disseminated to the respondents. This helped the researcher to test its feasibility in order to avoid uncertainty. According to Lancaster, Dodd and Williamson (2004:167), a pilot study is a minor gauge introductory study conducted before the actual research in order to check the viability or to improve the strategy of the research. A pilot study is done in preparation of the final questionnaire. Five (5) library computer and the internet users from each library were used to pre-test the questionnaire.

The data collected from the pilot study helped in improving some of the questions. It was also important to include an introductory and a closing statement in order to help the respondents to show understanding of what the study is about. The pilot study further helped the researcher to determine the amount of time required to complete the questionnaire. The purpose of the pilot study was also to determine if the questions asked in the questionnaire were understandable to the participants. If there were any inconsistencies in

the draft questionnaire, changes would have been effected before the final questionnaire was distributed to the participants. However, there were no changes effected to this study since the respondents did not encounter any difficulties when completing the questionnaires. It took the researcher a month to pilot the questionnaire. The pilot study was conducted during the month of April 2015. The findings of the pilot study indicate that the respondents understood the questionnaire and as such no changes were made on the questionnaire after conducting a pilot study.

3.9. Ethical considerations

Before the researcher embarked on the study, there were some ethical considerations that should be observed. In this section, ethical considerations that were taken into account in this study are discussed.

3.9.1. Confidentiality

The data that were collected in this study were treated privately. Therefore, the names of the participants were not mentioned on the questionnaires. The information was only utilized for the purpose of the survey. The participants' documentation was also protected by ensuring their namelessness in the final report. The questions that were asked were also carefully organized to avoid questions that may humiliate or irritate the participants.

3.9.2. Data fabrication and falsification

Once the gathering, examination, and clarification of data begins, there is a probability of what is known as academic fraud, which in most cases can be regarded as worse than plagiarism. Academic fraud includes the deliberate falsification of what has been done. This comprises making up data and results or persistently putting forward assumptions that are not accurate. The researcher made sure that the data collected was accurately interpreted and

the findings reflected the views of the respondents. The researcher desisted from making up the results and findings of the study. In addition, the recommendations were based on the accurate findings of the study.

3.9.3. Plagiarism

The first issue concerning plagiarism was that the researcher needed to be very careful not to pervert someone else's work as his own. Plagiarism is a breach of the student code of behaviour and can result in the failure of the research study or exclusion from the university. Therefore, it is helpful to be very careful when utilizing materials from other researchers with respect to correct referencing. To avoid plagiarism, it is significant to ensure that all the works utilized in the study are correctly cited and acknowledged.

3.9.4. Research permits

Letters of request for consent (*see appendixes A and B*) to conduct the study were offered to the respondents, the selected libraries and the management team of provincial libraries and archives. During the data gathering process, the researcher introduced the aim and significance of the study to the participants in order to get their permission. The information collected was treated confidentially at all times and was used virtuously for this study.

2.9.5 .Ethical clearance

The research proposal was submitted to the university ethical clearance committee before approval so that the committee could check if the research was executed in an ethical manner. The committee checked if the research did not undermine any race and that there is gender imbalances. If so then it should be corrected, and that the methodologies and procedures deployed in

the study were of good ethical standard before the research could be conducted.

3.10. Conclusion

In this chapter the researcher presented the research methodologies to be utilized, the research design, and discussed the qualitative and quantitative research. It has been indicated that this study used the descriptive quantitative research. The chapter also looked at the population and sampling of the study, data collection and procedure and the ethical implications. The next chapter presents the data analysis and the interpretation of the study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter focuses on the presentation, analysis and the interpretation of data. These data are statistically presented in table and graphs form. According to Mouton (2001:50), "data analysis is the procedure of converting raw data into practical information, habitually presented in the form of a printed analytical article, in order to add value to the arithmetical productivity". Analysis of data is a method of reviewing, cleaning, altering, and exhibiting data with the goal of determining valuable information, suggesting assumptions, and supporting decision-making. Data analysis has several surfaces and tactics, surrounding various procedures under a diversity of names, in various businesses, science, and social science spheres (Mouton, 2001:51).

According to Babbie (1989:40), data interpretation is part of day-to-day life for most individuals. Interpretation is the procedure of making sense of statistical data that have been collected, examined, and presented. People interpret data when they turn on their television sets and watch the news presenter reporting on a poll, when they recite advertisements claiming that one product is better than another, or when they choose grocery store items that claim they are more effective than other leading brands (Babbie, 1989:42).

In this study data are presented in the form of tables and bar graphs, and then examined and interpreted in descriptive form. This is completed according to the number of people who responded on a certain question and followed by the percentage thereafter.

4.2. Reponses rate

According to Burns and Grove (2005:121), a response rate in a study refers to the number of individuals who answered the review divided by the number of individuals in the sample. It is generally articulated in the form of

a percentage. The response rate of this study has been completed in the following manner: the researcher prepared 100 questionnaires that were distributed to five (5) public libraries in Ngaka Modiri Molema District. 20% of the questionnaires were distributed to all five (5) libraries, and as a result 100 (100%) questionnaires were distributed. Therefore a response rate of 100% was achieved. The researcher intended to administer 100 questionnaires to the users of the computers and internet so that the research become hundred percent in terms of the percentage rate. As such those questionnaires were divided according five libraries.

4.3. Analysis of questionnaire data

4.3.1. Demographic characteristics of respondents

The respondents were first asked about their demographic characteristics such as gender, age, education, race, employment and monthly income. This demographic information was vital to this study because it enabled the researcher to determine if indeed there was a digital divide in communities in the Ngaka Modiri Molema.

The respondents were asked about their demographic characteristics because it is assumed that the demographic factors such as gender, educational level, unemployment status, geographic areas of the library users contribute to the digital divide. Singh (2009:17) as discussed in the literature review discovered that there is a mentality that computers are only for the brainy, for males and only for the white people. Bentley (1998:21) also indicated that many youth use computer more than the elderly people in the rural communities. These might be possibly be the situation in Ngaka Modiri Molema District. Therefore, even though this study was not based on the demographic factors but the researcher is able to prove that there is a digital divide and also be able to illustrate the causes and provide possible solutions to bridge the digital divide. If so, the question is: what causes these digital disparities and who are mostly affected by it? The researcher will be able to know who mostly uses computers in the libraries and the internet between the male and female participants.

Variables	Responses	Number	Percentage
Gender	Male	54	54 %
	Female	46	46 %
	Total	**100**	**100 %**
Age	16-20	42	42 %
	21-30	36	36 %
	31-40	16	16 %
	41-50	03	03 %
	51-above	05	05 %
	Total	**100**	**100 %**
Race	African	98	98 %
	White	01	01 %
	Coloured	01	01 %
	Indian	00	00 %
	Others	00	00 %
	Total	**100**	**100 %**
Level of education	At secondary school	32	32 %
	Obtained senior certificate	22	22 %
	At college/university	30	30 %
	Obtained junior degree	12	12 %
	Others	4	04 %
	Total	**100**	**100 %**
Employment status	Employed	25	25 %
	Self employed	7	07 %
	Unemployed	60	60 %
	Looking for a job	8	08 %
	Total	**100**	**100 %**
Monthly income	None	70	70 %
	R500- 1 500	4	04 %
	R1 600- 3 000	6	06 %
	R3 000- 6 000	2	04 %
	R6 000- 15 000	11	11 %
	R15 000- or more	7	07 %
	Total	**100**	**100 %**

Table 4.3.1 Demographic factors of respondents

It was also important to determine as to whether the users are still studying or not, whether they were employed or not, and if they had incomes on a monthly basis. The respondents were first asked about their gender. Table 4.3.1 presents the results in terms of how many males and females participated in the study. Fifty-four (54%) male respondents and forty-six (46%) female respondents completed the questionnaire. Table 4.3.1 also reveals that forty-two (42%) of the respondents who completed the questionnaire were between 16-20 years, thirty- six (36%) were between 21-30 years, sixteen (16%) between 31-40 years, three (3%) between 41-50 years, and five (5%) were between the age of 51 years and above.

Ninety-eight (98%) of the respondents who completed the questionnaire were African, one (1%) were white, one (1%) were coloured. The Indians and others did not complete the questionnaire.

Table 4.3.1 also shows that thirty- two (32%) of the respondents who completed the questionnaire were secondary school learners, twenty-two (22%) obtained their senior certificates (matric), thirty (30%) were at college/university, twelve (12%) obtained their junior degrees/diplomas, and four (4%) had other qualifications such as BA honours and master's degrees.

Table 4.3.1 also reveals that twenty-five (25%) of the respondents who completed the questionnaire were employed, seven (7%) were self-employed, sixty (60%) were unemployed, and eight (8%) were looking for jobs.

Table 4.3.1 furthermore reveals that seventy (70%) of the respondents who completed the questionnaire had no income, four (4%) earned between R500-1 500, six (6%) earned between R1 600-3 000, two (2%) earned between R3 000- 6 000, eleven (11%) earned between R6 000-15 000 and seven (7%) earned R15 000 or more.

4.3.2. Computer and the internet usage patterns

In order to determine if the users at Ngaka Modiri Molema public libraries benefit from using computers and the internet, they were first asked about the

frequency at which they use these services. The more users visit the library computer rooms, the more likely that they are benefiting from using such services. The results are presented in the table below.

4.3.2.1. Period of using library computers and the internet

	C	%
Less than a month	41	41
1-6 months	16	16
6 months – 1 year	12	12
1-3 years	22	22
3 or more years	9	9
Total	100	100

Table 4.3.2 Period of using library computers and the internet

Table 4.3.2 shows the findings relating to how long the respondents use the library computers and the internet. The results show that forty-one (41%) of the respondents have used the library computers and the internet for less than a month, sixteen (16%) of the respondents have been using the library facilities for 1-6 months, twelve (12%) of the respondents have been using it for 6 months- a year, twenty-two (22%) respondents have been doing so for 1- 3 years, and 9% (9) of the respondents have been using the facilities for 3 years or more.

4.3.2.2. Frequency of using library computers and the internet

	C	%
Daily	21	21
Weekly	47	47
1-2X a month	20	20
1-2X in 6 months	1	1
1-2X a year	1	1
Once every few years, not too often	16	16
Total	100	100

Table 4.3.3 Frequency of using library computers and the internet

Table 4.3.3 shows that twenty-one (21%) of the respondents uses the library computers and the internet on a daily basis, forty-seven (47%) use the library computers and the internet weekly, twenty (20%) of the respondents uses them 1-2 times a month, one (1%) of the respondents use 1-2X in 6 months, one (1%) of the respondents uses them 1-2X a year, and sixteen (16%) of the respondents uses the library computers and the internet once every few years, not too often.

4.3.3. Purpose for using computers and the internet

Again, in order to determine if the users were benefitting from access to computers and the internet, they were asked to indicate the purposes which they used these services for. Research, e-mails, social networks, games and the typing of documents were among some of the purposes for which they were asked to indicate how regularly they used computers and the internet.

Purpose and Frequency	Never	Seldom	Sometimes	Often	Always	Total
Research	27	5	16	19	33	100
Sending and receiving E-mails	25	14	16	20	25	100
Social networks	37	14	30	13	6	100
Typing (Word-processing)	28	6	16	20	25	100
Playing games	75	7	12	5	3	100

Table 4.3.4 Purpose for using computers and the internet

4.3.3.1. Research

Table 4.3.4 refers to research as the purpose for which the users used the library computers and the internet. Twenty-seven (27%) of the respondents never used the library computers and the internet for research, five (5%) seldom use the library computers and the internet for research, sixteen (16%) sometimes use the library computers and the internet for research, nineteen (19%) often use the library computers and the internet for research and thirty-

three (33%) respondents always used the library computers and the internet for research.

4.3.3.2. Sending and receiving e-mails

Table 4.3.4 refers to sending and receiving e-mails as the purpose for which the users used the library computers and the internet. Twenty-five (25%) of the respondents never used the library computers and the internet for sending and receiving their e-mails, fourteen (14%) respondents seldom send and receive e-mails, sixteen (16%) respondents sometimes sent and received e-mails, twenty (20%) participants often sent and received e- mails, and twenty-five (25%) always used the library computers and the internet for sending and receiving their e-mails.

4.3.3.3. Social networks

Table 4.3.4 also refers to social networks as the purpose for which the users used the library computers and the internet. Thiry-seven (37%) respondents never used the library computers and the internet for social networks pages, fourteen (14%) seldom use computers and the internet for social network, thirty (30%) sometimes used the facilities for social network, thirteen (13%) respondents often use computers and the internet for social networks, and six (6%) of the respondents always used the library computer and the internet for social networking.

4.3.3.4. Typing (Word processing)

Table 4.3.4 also refers to typing as the purpose for which the users used the library. Twenty (28%) of the respondents never used the library computers for typing, six (6%) seldom used computers for typing, sixteen (16%) respondents sometimes use computers for tying, twenty (20%) respondents often used computers for typing, and twenty- five (25%) of the respondents always uses the library computers for typing.

4.3.3.5. Playing games

Table 4.3.4 furthermore refers to playing games as the purpose for which the users used the library computers and the internet. Seventy-five (75%) of the respondents never use the library computers for playing games, seven (7%) seldom used the library computers and the internet for playing games, twelve (12%) sometimes use the library computers and the internet for playing games, three (3%) often used the library computers and the internet for playing games, and three (3%) of the respondents used computers and the internet for playing games always.

4.3.4 Challenges of using computers and the internet

For the purpose of determining the challenges that the users of computers and the internet had in public libraries in Ngaka Modiri Molema, the respondents were asked the following: computer lab closed?, the internet disconnected?, lack of computer skills?, computer lab overcrowded?, and not enough computers?

Challenges and Frequency	Never	Seldom	Sometimes	Often	Always	Total
Computer lab closed	50	11	26	12	1	100
The internet disconnected	36	20	30	10	4	100
Lack of computer skills	69	12	15	2	2	100
Computer lab overcrowded	29	14	24	13	20	100
No enough computers	32	7	22	15	24	100
Skills of the respondents	7	6	42	32	13	100

Table 4.3.5 Challenges of using computers and the internet

Table 4.3.5 shows that fifty (50%) of the respondents never found the library computer lab closed, eleven (11%) said they seldom found the library

computer lab closed, twenty-six (26%) sometimes found the computer lab closed, twelve (12%) often found the computer lab closed, and only one (1%) of the respondents always found library computer lab closed.

Thirty-six percent (36%) of the respondents using the library computers and the internet never found the internet disconnected, twenty (20%) of the respondents seldom found the library the internet disconnected, thirty (30%) sometimes found them disconnected, ten (10%) often found it disconnected, and four (4%) always found the library the internet disconnected.

Sixty-nine (69%) of the respondents using computers never lack skills to use computers, twelve (12%) of respondents seldom lack skills to use computers but, fifteen (15%) of respondents sometimes lack skills to use computers, two (2%) often lack skills to use computers, and two (2%) of the respondents always lack skills to use computers.

Twenty-nine percent (29%) of the respondents never found computer lab overcrowded, fourteen (14%) of the respondents seldom found the computer lab overcrowded but, twenty-four (24%) of the respondents sometimes found the computer lab overcrowded, thirteen (13%) often found them overcrowded, and twenty (20%) of the respondents always found it overcrowded.

Thirty-two percent (32%) of the respondents never found the library computers not enough, seven (7%) seldom found the library computers not enough, twenty-two (22%) of the respondents sometimes found the library computers not enough, fifteen (15%) often found it not enough, and twenty-four (24%) of the respondents always found the library computers not enough.

Table 4.3.5 reveals that seven (7%) of the respondents using the library computers and the internet had no skills at all to use computers, six (6%) of the respondents seldom had skills to use the library computers, forty-two (42%) had moderate skills to use the library computers and the internet. However, to some extent, thirty-two (32%) of the respondents had the skills to use computers and the internet to a larger extent, and thirteen (13%) of the respondents had the skills to use the library computers and the internet to a very large extent.

4.3.5. The extent in which the users are skilled to use computers

Figure 2.4 reveals that eight (8%) of the respondents did not have the skills to use the computers and internet at all. Six (6%) had no skills but they are better than those who had no skills at all. Forty-two (42%) of the respondents indicated that they had basic skills to use the computers and internet while thirty-one (31%) have impressive skills. Thirteen (13%) of the respondents indicated that they high skills of using the computers and internet.
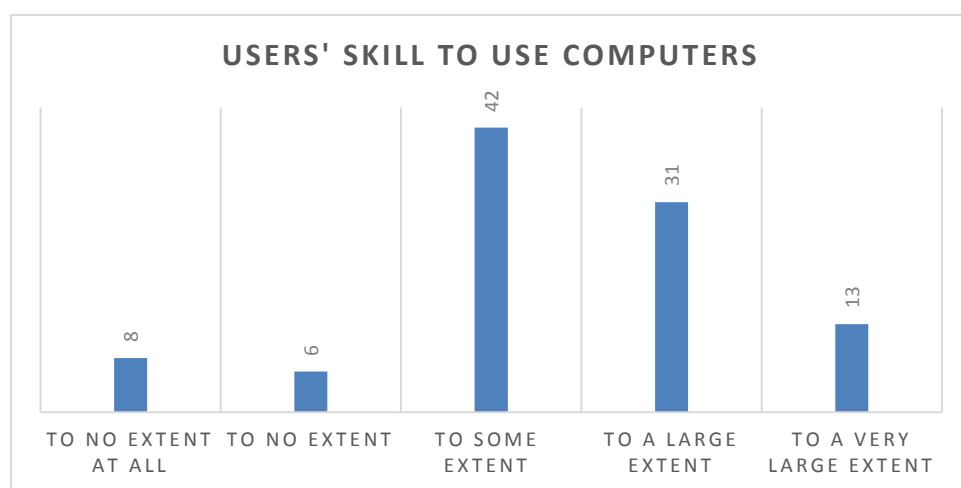

Figure 2.4 The extent in which the users are skilled to use computers

4.3.6. Importance of free access to computers and the internet

Figure 2.5 reveals that three (3%) of the respondents found it not important at all to have free access to computers and the internet, none of the respondents found them not important, two (2%) of the respondents found free access to computers and the internet moderately important, twenty- three (23%) found free access to computers and the internet important, and seventy-two (72%) of the respondents found free access to the library computers and the internet very important.

IMPORTANCE OF ACCESS TO COMPUTERS AND THE INTERNET

POOR 0, FAIR 4, AVERAGE 17, GOOD 49, EXCELLENT 30
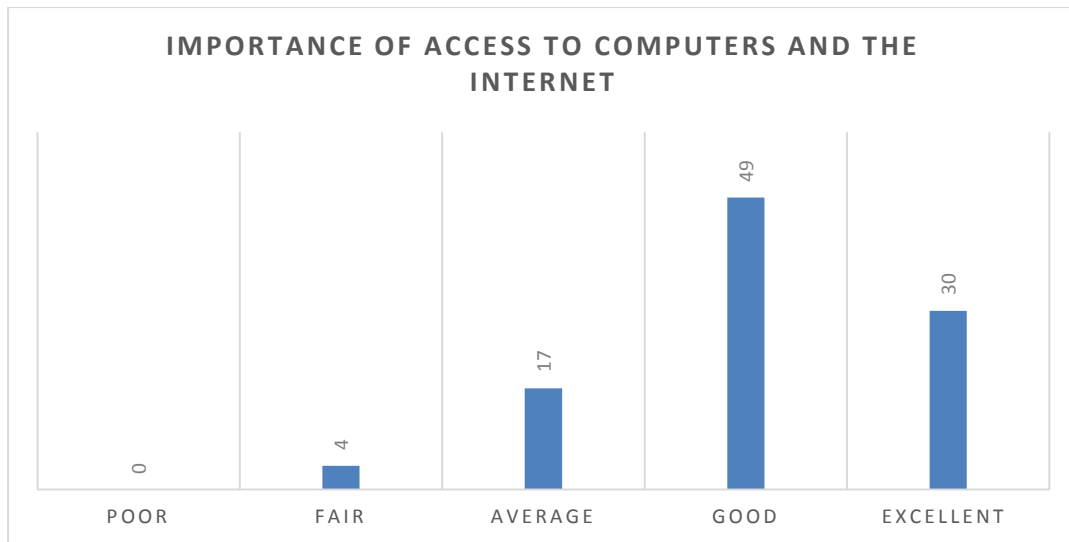
Figure 2.5 Importance of free access to computers and the internet

4.3.7. General impression about the computers and the internet

Figure 2.6 shows that four (4%) of the respondents said the library computers and the internet were fair, seventeen (17%) said computers and the internet were average, forty-nine (49%) of the respondents said the library computers and the internet are good, and thirty (30%) said the library computers and the internet were excellent.

GENERAL IMPRESSION OF THE COMPUTERS AND THE INTERNET

POOR 0, FAIR 4, AVERAGE 17, GOOD 49, EXCELLENT 30
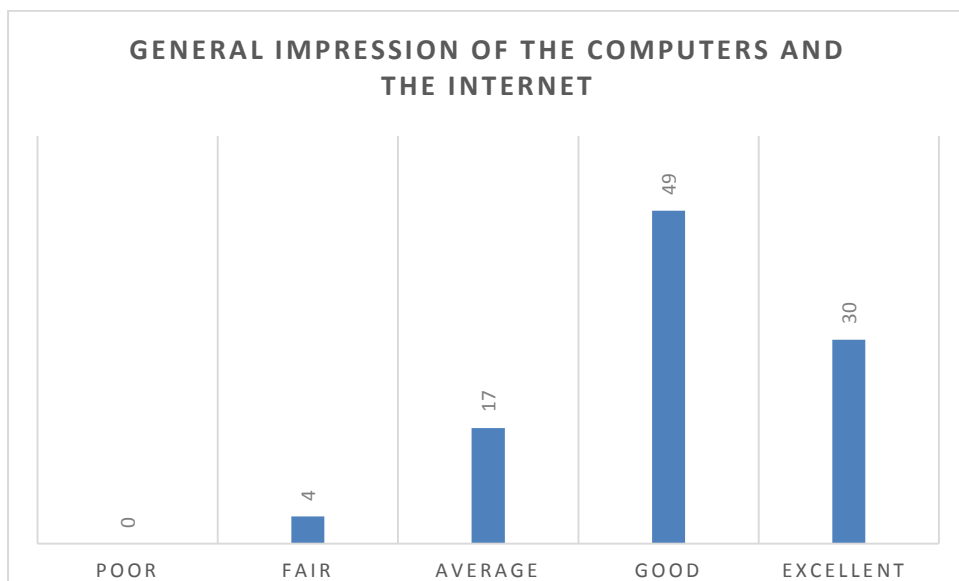
Figure 2.6General impression about computers and the internet

4.3.8. Views of the respondents

This refers to the views of the respondents on the importance of computers and the internet. Most of the respondents view the library computers and the internet important. The following are the comments of the majority of respondents who view computers and the internet important:

- Library computers and the internet help with research when writing assignments.
- Help bridge the digital divide, those without access at their homes have access in the library.
- Help sharpen our computer skills
- Public libraries provide access to computers and the internet at no cost.
- Help in eradicating illiteracy.
- Provide access to electronic books.
- Provide access to social media e.g. Facebook.
- Provide access to e-mails
- Are important for typing.
- Students use computers and the internet to apply for bursaries and at universities.
- Unemployed use computers and the internet to apply for online jobs or generally, looking for the vacancies.

4.4. Data interpretation

4.4.1. Gender distribution

More male than female respondents completed the questionnaire. Most female users were not available in the library when the questionnaire was distributed. As such, this may be the reason why few females completed the questionnaire as compared to males, but in no way is the study based on gender. This is supported by Sigh (2009:17) as discussed in the literature

review, that male patrons have more access to computers and the internet than female patrons.

4.4.2. Age

Many respondents from the age of 16-20 years participated in this study more than any other age group. This may be because the majority of them were online, researching about their school projects. The age group of 21-30 years also participated in this study- more than other groups. This may be because the majority of them were online, searching for job opportunities on online publications and websites while others were reading their e-mails. Others were probably applying for study bursaries in various universities.

Very few respondents were from the age of 41-50 years. This may be caused by the fact that the questionnaire was distributed during the day when many people were at work. Respondents from the age of 51 and above were very few. This might be caused by the fact that they were also at work when the questionnaire was distributed or because many of them do not use libraries. The average respondents were from the age of 31-40 years, and this might have been caused by the fact that many of them were working when data were collected.

Bentley (1998:3) as discussed in the literature review that young individuals utilize more information and communication technology than older individuals because young individuals were born in the epoch of technology while older people are still besieged with technology.

4.4.3. Race

Many respondents who completed the questionnaire were Africans. This might have been caused by the fact that the majority of the population in Mafikeng is Africans, and many of them use public libraries because perhaps many of them cannot afford to buy computers for themselves. The other reason might be that public libraries are found in areas where there are more

Africans than other races. Perhaps if this study was conducted in urban areas the outcome would be different.

There were fewer white and coloured respondents. This might have been caused by the fact that they were not available when the questionnaire was distributed. None from other races were also available. This is supported by Robert (2004:1) as discussed in the literature review that in most cases, there is always a specific racial cluster utilizing computers and the internet more than other clusters. For example, in Robert's study African Americans utilize computers more than others.

4.4.4. Level of education

Many respondents were secondary school learners and college/university students. This might have been caused by the fact that the questionnaire was distributed towards the beginning of their final year examination, and as such, many of them were in the libraries preparing for the exams. They are followed by those who obtained their senior certificates and junior degrees, who have been using computers and the internet perhaps for job hunting or reading online newspapers for the news and general information.

There were few respondents with honours and masters' degrees. This might have been caused by the fact that the majority of them were working during the time the questionnaire was distributed. Bentley (1998:16) as discussed in the literature review supported the above interpretation. Bentley states that educational status of the community causes the digital divide in the sense that individuals who are not educated do not have interest in surfing the internet and subsequently, they become victims of inequalities of the digital divide.

4.4.5. Employment status

Many respondents using the library computers and the internet were unemployed, and may be using the library computers for job hunting, for tips about interviews, writing CVs and checking their e-mails. This shows that the

rate of unemployment in South Africa is too high. They were followed by the employed respondents who may be using the library computers and the internet to receive and send e-mails as well as searching for job opportunities and general information.

Few respondents were self-employed as they perhaps use the library computers and the internet to improve their business standards. They were followed by respondents who were looking for jobs, who were probably using the library computers and the internet for searching for jobs. According to James (2005:114) public Library Funding and Technology Access Study 2009-2010, 62% of employed individuals utilize public libraries, and this is above all individuals who utilized public libraries in America. This supports the fact that employed people use the public libraries in Ngaka Modiri Molema District public libraries.

4.4.6. Monthly income

Many respondents using the library computers and the internet had no income, as such they use these facilities because they cannot afford to buy computers/cellphones and data for themselves. They were followed by those who earned between R6 000- 15 000. These respondents use the library computers and the internet because they might be taking advantage of the free services offered by public libraries.

This is supported by Bentley (1998:9) as discussed in the literature review that individuals without income and those with low income cannot afford computers, smartphones and the internet, especially in the rural societies where there are no public libraries. People are affected by inequalities brought about by the digital divide. However, in the communities where there are public libraries, the communities depend on them for access to information communication technology.

4.4.7. Period of using library computers and the internet

Many respondents had been using computers and the internet for less than a month and this may be because since the majority of the users were students/learners, they were therefore always occupied with late classes and group discussions that do not need the internet to write. As a result, they might not be having enough time for browsing the internet. They were followed by those who had been using computers and the internet for one to three years, mainly because the majority of them are students from colleges and universities. Others were the working class who relied on the internet for survival.

In September 2008, a Harris Poll from Harris Interactive quoted in ALA survey (2015) revealed that 68% of Americans have a library card, while 76 % of them visited their local library in the past year to utilize the library services. This comprised computers and the internet. In that same period, 41% of Americans visited the website of their local libraries.

4.4.8. Frequency of using library computers and the internet

Many respondents use computers and the internet weekly, followed by those who use them daily and those who use them one- two times in a month. This may be because they used them to research about their school projects, to search for general information, to receive and send e-mails, to search for job opportunities, to read online newspapers from different websites while others used them to network on social media and to play games.

There were few respondents who used computers and the internet once every few years, not too often perhaps were those who had access on their own but just took advantage of the free services provided by the libraries. There were fewer respondents who used the library computers and the internet one- two times in six months, or one to two times in a year. May be the problem was the fact that they could still access the internet from their own computers or in their offices.

"According to Griffiths (2008) survey on interconnection: the IMLS national survey on the utilization of libraries, museums, and the internet, public library reports;   United States adults visited public libraries in person 760 million times and remotely 560 million times for a total of 1.3 billion visits in 2006. Another pointer of the number of visits to public libraries can be founded on the length of time since the last visit. Recent visits are more likely to specify a higher occurrence of visit. Approximately half of visits were 3 to 4 weeks ago or more current which is 49% for in person visitors and 56% for remote visitors."

4.4.9. Purpose of using computers and the internet

According to Khati (2013) on the role of public libraries in bridging the digital divide, a Cape Town study indicated that the patrons utilize computers and the internet of public libraries for similar purposes, which include research, e-mails, social media, typing and games. As such this statement supports the interpretation below.

4.4.9.1. Research

Many respondents using library computers and the internet were those who always used them for research. This was because since most of the users were students/learners, the unemployed and those looking for jobs, they probably used these facilities to research about their academic work, job hunting, typing their CVs, and to research for general information. These were followed by those who never used them for research because they spent their time typing their assignments, their CVs and playing games. They were followed by those who used them often and sometimes because they used them to apply for university bursaries online. Few of the respondents seldom used the library computers and the internet for research. Perhaps they used computers and the internet for many purposes such as typing CVs and assignments. According to Raseroka (2004:101) library computers and

internet are used by the library users when they are researching about their school assignments and projects.

4.4.9.2. Sending and receiving e-mails

Respondents who used library computers and the internet for sending and receiving e-mails were equal to those who never used them for such. Many respondents used them to send and receive e-mails, sending job applications and receiving feedback afterwards. Those who did not use them for e-mails probably did not have e-mail accounts. Few respondents seldom computer facilities for e-mails. They seldom used them perhaps because they did not often check their e-mails. Becker, Crandall, Fisher, Kenny and Landry, (2010) indicate that users of the public library computers and internet use the computers and internet to send and receive e-mails also.

4.4.9.3. Social networks

Many respondents never used the library computers and the internet for social networks because they were always busy researching their school projects, job hunting, and browsing for online newspapers for news instead of social networking. These were followed by those who used them sometimes for social networking, probably because they used Facebook to connect with friends.

Few respondents used them seldom and often used them for social networking. Perhaps they felt restricted by the time allocated for each individual in the library, since it was not enough for one to be social networking and researching at the same time. Even the server cannot cater for that for a longer time. This is supported by Darries (2003:67) as it is indicated in the literature review that the library users especially the youth use the library computers and internet for social media e.g. Facebook.

4.4.9.4. Typing (Word-processing)

Many respondents never used the library computers and the internet for typing because they probably spent most of their time researching and playing games instead of typing. These were followed by those who always, often and sometimes used the library computers and the internet for typing, perhaps typing assignments and CVs. Fewer respondents seldom used the library computer and the internet for typing, perhaps their time at the library was occupied with research. According to Jones (2005:116) as indicated in the literature review support this by indicating that the library users in most cases use the library computers among other reasons for typing their personal and professional documents.

4.4.9.5. Playing games

Many respondents never used the library computers and the internet for playing games. They are probably not even allowed to play games on the library computers. Few respondents often and seldom used computers and the internet for games. Perhaps the librarians in those libraries were not even aware of this. Jones (2005:118) also support this statement as indicated in the literature review that the library users especially school leaners are also using the library computers amongst other reasons for playing computer games in the library.

4.4.10. Challenges of using computers and the internet

Khan and Bhatti (2012) on an assessment of problems and challenges of information professionals in developing countries found that Pakistan patrons of public libraries, particularly in the rural communities experiences the challenges of lack of skills, computer lab closed due to no network coverage, lack of enough computers and computer lab space not enough." The study of Khan and Bhatti support the interpretation below:

4.4.10.1. Computer lab closed

Many respondents never found the library computer lab closed because the lab was always open for the public. These respondents were followed by those who sometimes found them closed perhaps when there were technical errors with computers or when they were broken. Few respondents seldom and always found them closed. Perhaps indeed computer labs in the public libraries are always open. However, there was always a valid reason for the computer lab to be closed.

4.4.10.2. The internet disconnected

Many respondents using the library computers and the internet never found the internet disconnected. They were followed by few who sometimes and seldom found them disconnected because in same days the library internet gets disconnected but it shouldn't take long for them to be reconnected unless there was a serious technical problem. Even though, library computers and the internet were in most cases connected but the server was unable to cater for a lot of people at the same time the whole day.

4.4.10.3. Lack of computer skills

Many respondents using library computers and the internet never lacked skills to use them. This may be because they were at colleges and universities while others were doing office work. Few respondents indicated they sometimes, often and always lacked skills to use computers and the internet. This was because they used them only when they were in the library.

4.4.10.4. Computer lab overcrowded

Many respondents never found computer lab overcrowded. This may be because each and every user in the library was allocated a specific time to use computers and the internet hence they were perhaps acclimatized to the allocated time frames. These respondents were followed by those who

sometimes and always found the computer lab overcrowded. This may be because many people in the communities depend on libraries to access computers and the internet and as a result the clientele increases.

4.4.10.5. Not enough computers

It was indicated that many respondents using the library computers and the internet never found computers not enough in the libraries, and this may be because the users shared the library computers based on the allocated time frames. These participants were followed by those respondents who always, sometimes and often found computers not enough because people relied on the libraries to access computers and the internet.

4.4.11. The extent in which the users are skilled to use computers

Many respondents had computer skills to some extent, followed by those who had skills to a large extent and those had skills to a very large extent. This may be because most of the users were secondary school learners, college and university students, including the working class who were exposed at early age with modern technology. Few indicated that they are not skilled at any extent at all because they had not been exposed to modern technology at all and they only see computers in libraries.

Lack of skills for the respondents is supported by the study by Ademodi and Adepoju (2009). Even though the study was about a university library, the impact is the same as public libraries. The study investigated computer skills among information professionals and library patrons in academic libraries on Ondo and Ekiti State in Nigeria. The study revealed the scarcity of computers and computer skills among professionals and the patrons. The study suggested that more courtesy and funds should be offered for training and obtaining of information and communication technological infrastructure in Nigerian University libraries. For digitalization reasons, library administration

should implore funds and assistant from overseas agencies and foundations who are interested in the cause.

4.4.12. Importance of free access to computers and the internet

Many of the library computers and the internet found it very important for the libraries to provide the users with free access to computers and the internet. These users were followed by those who found the provision of computers and the internet important. This may be because even those who had no access to computers and the internet before due to financial disparities could access them in libraries. They then had equal access like anybody else. Only three respondents found the provision of computers and the internet at the library not important at all even though they were free. This may be because they were still experiencing different challenges in libraries with regard to access to computers and the internet. These included, among others, internet disconnection, lack of enough computers and computer lab overcrowding.

Surveys summarizing this literature come to different conclusions regarding the overall evidence on computer's efficiency as learning tools as discussed in the literature review. Sivin-Kachala and Bialo (1999:3) assert that education technology has established a substantial positive outcome on accomplishment, while Kirkpatrick and Cuban (1998:6) conclude that on the basis of the critical assessments, we are unable to determine whether computers in schoolrooms have in fact, been of benefit, as promised. This supports the fact that there is a need for free access to computers and the internet in public libraries.

4.4.13. General impression about the library computers and the internet

Most of the users were generally impressed with computers and the internet in libraries. Most of them rated computers and the internet services provided by the libraries excellent and good. They might have taken into consideration the fact that even those who were disadvantaged by financial disparities had

access to computers and the internet in the libraries. Few considered them average perhaps due to the fact that they still experience challenges when accessing these facilities, which include lack of skills to use computers, computer lab overcrowding and internet disconnection.

More often than not, individual studies as discussed in the literature review find that computer use leads to outcome improvements, supporting Sivin-Kachala and Bialo's optimistic statement. However, concerns regarding the quality and significance of these reviews clarify Kirkpatrick and Cuban's hesitation to admit that huge positive impact prevails in the provision of computers and the internet in the public libraries. Therefore based on this positive effect, the users of public libraries are generally impressed with computers and the internet services provided by the public libraries.

4.4.14. Views of the respondents

This refers to the views of the respondents on the importance of computers and the internet. Most of the respondents viewed the library computers and the internet important because most of them indicated that these gadgets play a crucial role in bridging the digital divide. They help them to do effective research for their academic projects; they are used for typing, searching for business ideas, submitting assignments online, applying for universities online while the working class search for job opportunities by applying online, and send and receive e-mails. Most of the respondents indicated that computers and the internet help to eradicate illiteracy and bridge the gap between the information rich and information poor.

4.5. Conclusion

This chapter was about data analysis and interpretation. The demographic characteristics of the respondents were analyzed. The chapter also focused on computer and internet usage patterns, period of using library computers and the internet, frequency of using library computers and the internet, the

purpose for using computers and the internet, challenges of using computers and the internet, the skills of respondents, the importance of computers and the internet, the general impression about computers and the internet and the general views of the respondents about computers and the internet. The next chapter focuses on the major findings, the recommendations for further study and limitations of the study.

CHAPTER FIVE

MAJOR FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1. Introduction

This chapter presents an overview of the study by restating the aim and objectives of the study, the major findings of the study, recommendations and further recommendations of the study and the limitations of the study. It also presents conclusions drawn from the findings.

5.2. Restating the aim and objectives of the study

5.2.1. Aim of the study

The aim of the study was to investigate the users' perspectives on the role played by public libraries in Ngaka Modiri Molema District in bridging the digital divide. Based on the results of the study, it is therefore concluded that the public libraries in the district play a crucial role in bridging the digital divide. This conclusion is based on a number of reasons. It is indicated by many respondents that they find access to free computers and the internet services in public libraries very important. It is also indicated that many respondents are generally impressed about the status of computers and the internet in the public libraries and the services they provide to bridge the digital divide. It is found that it is highly important for public libraries to provide free access to computers and the internet in order to bridge the digital divide.

5.2.2. Objectives of the study

5.2.2.1. Demographic characteristics

It is found that many male clients utilize the library computers and the internet more than the female clients. It is found that teenage and young adult clients utilize the library computers and the internet more than any other age group

that participated in this study. It is found that both the unemployed and the employed clients utilize the library computers and the internet more than any other persons. It is also found that the clients without income mostly utilize the library computers and the internet; it is found that many African clients use the library computers and the internet more than the entire race groups that participated in this study. It is also found those secondary school learners who obtained their senior certificates and those who are at colleges and universities mostly utilize the library computers and the internet.

The purpose of this objective is to prove that there are disparities in the communities that are caused by demographic factors such as gender, race, and employment status, level of education and salary levels. It shows that people in the community do not use the computers and internet because they thought computers are for the brainy and for certain racial groups as this is indicated in the literature review. It also shows that people do not use the computers and internet because they can't afford them on their own. It shows also that the level of education contributed a lot in people familiarize themselves of computers and internet. Therefore, over and above it is only the public libraries that are able to provide access to computers and internet equally to all the members of the community and as such public libraries play a crucial role in bridging the digital divide.

5.2.2.2. Users benefits for using computers and the internet

It is found that the users in the Ngaka Modiri Molema District public libraries are benefitting from computers and the internet. As such they are able to research, receive and send e-mails, type and search for career and employment opportunities through computers and the internet because the services are free of charge in the public libraries.

5.2.2.3. Users satisfaction on the computers and internet

It is found that library users are satisfied with the library computers and the internet because most of them indicated that computers and the internet help them with research, help to eradicate illiteracy, sharpen their computer skills, help them apply for bursaries and opportunities online. As such the library computers and the internet help bridge the digital divide, provide access to both the information poor and the information rich.

5.2.2.4. Provision of access to computers and the internet

It is found that the provision of access to computers and the internet play a crucial role in bridging the digital divide. It is found that most of the clients in public libraries only access computers and the internet services in libraries. It is also found that computers and the internet services in public libraries across the district sharpen the computer skills of the clients. It also found that clients recommend that the public libraries across the district should offer basic skills classes for computer literacy to impart more skills to those who cannot use computers and the internet.

5.3. Major findings of the study

The following are the findings of the study:

- Library computers and the internet are mostly utilized by male users.
- Library computers and the internet are mostly utilized by users between the ages of 16-20 and 21-30 years.
- Library computers and the internet are mostly utilized by Africans.
- Library computers and the internet are mostly utilized by secondary school learners, those who obtained their senior certificates and those who are at colleges and universities.
- Library computers and the internet are utilized mostly by unemployed and the employed clients.

- Library computers and the internet are utilized by clients without any income.
- Library computers and the internet are mostly utilized weekly, and on a daily basis.
- Users have basic skills to use computers and internet; however, others don't have skills at all.
- Library users utilize computers and the internet mostly for research, typing, AND sending and receiving e-mails.
- Library users highly appreciate the role of the libraries in the provision of free access to computers and the internet.
- Library users find it highly important to provide free access to computers and the internet in bridging the digital divide.
- Library users are generally impressed with the library computers and the internet.
- Library users indicated that the library computers and the internet sharpen their computer skills.

5.4. Recommendations of the study

This research concludes with two endorsements for librarians and information professionals, library administrators, researchers and policymakers. First, improve the understanding, for the public libraries in Ngaka Modiri Molema District and the library profession in general, of the value of access to computers and the internet. And second, look above access to a wider variety of technological services and roles. Providing internet access has had a massive influence on public libraries, and public libraries in Ngaka Modiri Molema District have played a key role in lessening the digital divide across the entire district. It is vital for librarians to preserve and improve the delivery of public internet access, and to convince their societies and policymakers of the prominence of this role. However, it is just as imperative for public libraries in Ngaka Modiri Molema District to think beyond the facility of access if they are to continue to play this role. For access alone is not sufficient to bridge the digital injustices and the value of access to internet stations, relative to other

contributions such as wireless access and internet training services may become less clear if movable computing and worldwide broadband provision continue to upsurge.

5.5. Further recommendations

Public librarians should also evaluate the computer literacy programmes that are facilitated by libraries for more contribution in bridging the digital divide. By so doing, they also evaluate the users' perspective on the role of services that libraries provide to bridge the digital divide in Ngaka Modiri Molema District. They also ensure that both resources and skills are provided to the users.

5.6. Limitation of the study

The limitations of the study include obstacles or factors that disrupted the researcher from completing the study without any hassles. Among others the following limitations can be pointed out: questionnaires were distributed when the library users across the district were preparing for their final year examinations, in a way it shows that many users of public libraries are students, and as a result, it was observed that many users did not take the study seriously. Some refused to take part in the study. Most of the adult users do not use library services as often as they should, especially in rural communities. Out of sixteen (16) public libraries in Ngaka Modiri Molema District, only five (5) were selected for the purpose of this study. Therefore, this is not a true reflection and representation of the entire population in district.

5.7. Conclusion

In conclusion, the study has been conducted successfully and its findings have been discussed. Therefore, the overall percentages of the respondents are highly appreciating and acknowledging the importance and are generally

impressed with the provision of free access to the computers and the internet. This is because they believe the facility play a significant role in bridging the digital divide. As such, the following were taken into account in drawing and formulating this conclusion: the library computers and the internet users are able to do research, receive and send e-mails, type personal and academic related documents, access social networking websites and play games. Those who have no access to computers and the internet due to socio-economic disparities can access these facilities just like everyone else. Nevertheless, there are challenges such as lack of enough computers, the disconnection of the internet and computer lab overcrowding. But the overall findings state that public libraries in Ngaka Modiri Molema District play a significant role in bridging the digital divide in the district. Therefore, this district and the provincial government should see the public libraries as knowledge and information centres with computers connected to the internet to in the libraries. The district should also train the librarians so that they will be able to impart computer skills to the communities, especially to the users who have indicated that they don't have skills to use computers and internet. Public librarians should also initiate computer orientation courses to provide basic skills to those who are computer illiterate in the communities.

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APPENDIX: A

Covering letter to Ngaka Modiri Molema District Library

Department of Information Studies

University of Limpopo (Turfloop Campus)

Private Bag x1106

Sovenga

0727

02 May 2014

The Manager

Provincial Library and Archives

Private Bag X90

MMABATHO

2735

Dear Sir/Madam

PERMISSION TO DISTRIBUTE QUESTIONNAIRES

I am Modiba Mashilo Thomas, a masters' student number 200722522 at the University of Limpopo (Turfloop Campus) in the Department of Information Studies conducting a research entitled, "The user's perspective role of public libraries in bridging the digital divide in Ngaka Modiri Molema District, North West Province, South Africa". The aim of this study is to investigate and understand the role played by public libraries in the district in bridging the digital divide.

Yours faithfully

Modiba, MT (200722522)

APPENDIX: B

Consent letter to the respondents

Department of Information Studies

University of Limpopo (Turfloop   Campus)

Private Bag x1106

Sovenga

0727

Dear respondent

A REQUEST TO PARTICIPATE IN MY STUDY

I am Modiba Mashilo Thomas, a masters' student in Information Studies at the University of Limpopo (Turfloop Campus) in the Department of Information Studies conducting a research about the role played by public libraries in bridging the digital divide in Ngaka Modiri Molema District, North West Province, South Africa. The aim of this study is to investigate and understand the role played by public libraries in the district in bridging the digital divide. Your responses will help me to understand the effectiveness of public libraries in bridging the digital divide in the district from the user's perspective. I would therefore like to urge you to be as honest as possible with your responses for better understanding of the issues related to the digital divide in the library sector.

Yours faithfully

Modiba, MT (200722522)

APPENDIX: C

Research questionnaire

This is a research questionnaire that aims to investigate the role of public libraries in Ngaka Modiri Molema District in bridging the digital divide. Please put a cross [X] next to the space provided as your answer.

SECTION A: ABOUT THE RESPONDENTS	
1. Gender?	
1.1. Male	
1.2. Female	
2. Your age?	
2.1. 16-20	
2.2. 21-30	
2.3. 31-40	
2.4. 41-50	
2.5. 51 and above…………………..	
3. What race are you?	
3.1. African	
3.2. White	
3.3. Coloured	
3.4. Indian	
3.5. Other specify……..	
4. Level of education?	

4.1. At secondary school	
4.2. Obtained a senior certificate	
4.3. At college/university	
4.4. Obtained a junior degree	
4.5. Other specify…….	
5. Employment status?	
5.1. Employed	
5.2. Self employed	
5.2. Unemployed but	
5.3. Looking for a job	
6. What is your monthly income?	
6.1 None	
6.2 R 500.00 - R1500.00	
6.3 R 1600. 00 - R 3000.00	
6.4 R 3000.00 - R 6000.00	
6.5 R6000.00 - R15 000.00	
6.6 R 15 000-00 or more	
7. Which library are you affiliated to?	
7.1 Barolong Public Library	
7.2 Danville Public Library	
7.3 Ottoshoop Public Library	
7.4 Miga Public Library	

7.5 Mmabatho Public Library	
7.6 None	

SECTION B: USAGE OF COMPUTERS AND THE INTERNET

8. How long have you been using the library computers and the internet?

8.1. Less than a month	
8.2. 1-6 month	
8.3. 6 month – 1 year	
8.4. 1- 3 years	
8.5. 3 or more years…………….	

9. How often do you use the library computers and the internet?

9.1. Daily	
9.2. Weekly	
9.3. 1-2X a month	
9.4. 1-2X in 6 month	
9.5. 1-2X a year	
9.6. Once every few years, not too often	

10. Which of the following purposes do you use library computers and the internet for? Please put a cross in the column that describes your response using the following scale for each purpose: 1= Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Always.	**1**	**2**	**3**	**4**	**5**

	1	2	3	4	5
10.1 Research					
10.2 E-mails					
10.3 Social Networks					
10.4 Typing					
10.5. Games					
10.6. Others specify………..					
11. How often do you experience the following challenges when using computers and the internet? Please put a cross in a column that describes your response using the following scale for each challenge:1=Never;2=Seldom; 3=Sometimes; 4= Often; 5= Always	1	2	3	4	5
11.1. Computer Lab Closed					
11.2. The internet disconnected					
11.3. Lack of skills to use computers					
11.4. Computer Lab overcrowded					
11.5. Computers not enough					
12. To what extent are you skilled with using a computer and the internet?					
12.1. To no extent at all					
12.2. To no extent					
12.3. To some extent					
12.4. To a large extent					

12.5.	To a very large extent	
SECTION C: IMPORTANCE OF COMPUTERS AND THE INTERNET		
13	**How do you find the importance of libraries to provide free access to computers and the internet in bridging the digital divide?**	
13.1.	Not important at all	
13.2.	Not important	
13.3.	Moderately important	
13.4.	Important	
13. 5	Very important	
14.	**What is your general impression of the library computers and the internet?**	
14.1	Fair	
14.2	Average	
14.3	Good	
14.4	Excellent	
1.	In your own view, what is the importance of computers and the internet in your public library? Please comment below!	

Thank you for completing this questionnaire. Your participation is highly appreciated.