

**PROVISION OF SUSTAINABLE INTERNET ACCESS TO PUBLIC LIBRARIES  
IN SOUTH AFRICA**

**by**

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## DEDICATION

I dedicate this thesis to my children, Chepe, Ramatsobane, Bogoshi, Mamogale, Mogale, Tshepho and Kutullo, and to my late mother, Raesetja Maria Ledwaba, who have laid a solid foundation for my education; I wish she lived to see the ultimate results of her sacrifices.

*“Ke Lesiba la boMankgodi’a mašianoke’a Lekgetla,*

*Nonyane maila-go-kgongwa,*

*Ya kgongwa ‘timu di a tsoga,*

*Ke wa bo Serepudi selala dingwe dikgwaletšo,*

*Wa mahlahlaiša nkata ya kgomo!*

*Ke tšhaba baditi”*

## ACKNOWLEDGEMENTS

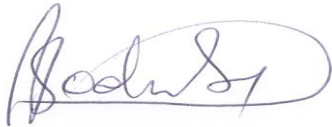
I would like to express my indebtedness and sincere appreciation to the following persons for their contribution to the successful completion of this study:

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- The ladies after my heart, Mpheye and Dikeledi, as well as my children for their understanding and patience during my study
- Most importantly, to the Almighty God for His grace throughout my research journey

## DECLARATION

**Student number: 33767122**

I declare that this study, "**Provision of sustainable internet access to public libraries in South Africa**" is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



30 August 2018

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Lesiba Stephen Ledwaba

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Date



30 August 2018

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Promoter: Dr T Mugwisi

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Date



30 August 2018

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Co-Promoter: Prof GV Jiyane

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Date

## **ABSTRACT**

The study set out to investigate the provision of sustainable internet access to public libraries in South Africa. The rationale of the study was to investigate how sustainable internet access can be provided to public libraries in South Africa and to determine how they have developed and are regulated. Internet access is a key driver in delivering information services to the users and a critical tool in facilitating information sharing regardless of platform and geographic location. Therefore, the level of information and communications technology (ICT) penetration in public libraries formed a critical part of the study as the provision of internet to these libraries depends on available ICTs.

The study employed a survey design and used interview tool to collect data from nine participants. Questionnaire augmented interviews as they were used to collect data from 322 respondents. The study used the probability sampling technique to collect data from the participants. The purposive sampling technique was used to select the participants for the interview, whereas the stratified probability, proportional to size, and systematic techniques were also used to select respondents in the senior categories, namely heads of public libraries. This ensured a sample size of 331 out of a population of 1 621 selected for the study. The sample size consisted of nine directors and 322 head librarians. No sampling was done on the nine heads (directors) of provincial public libraries, as the nature of this population did not warrant further dissection due to its small size.

A Microsoft Excel spreadsheet was used to analyse data. Questionnaires were analysed when they were returned and interviews were analysed when they were conducted. Written descriptions, tables and figures were used to present data in

an elaborative manner. Data was also presented through frequencies and percentages.

It emerged from the study that most public libraries (97%) were connected to the internet. The findings of the study showed that most public libraries (80%) were connected to the internet through the fixed lines and that each of the nine provinces had its own internet service providers (table 5.12).

The study recommended fixed lines for internet access to be laid to all public libraries in South Africa and that a government agency be used as a dedicated internet service provider for public libraries across all the nine provinces. A further study was recommended about the application of an internet access model used by academic institutions to public libraries.

## **KEY TERMS**

South Africa; Public libraries; internet access; internet service providers; ICT infrastructure; Community libraries; Computers; Digital divide; Regulatory framework; Information and Communication Technology

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>CD ROM:</b>	Compact Disc Read-Only-Memory
<b>DAC:</b>	Department of Arts and Culture
<b>ECA:</b>	Electronic Communications Act
<b>ICASA:</b>	Independent Communications Authority of South Africa
<b>ICTs:</b>	Information and Communications Technologies
<b>IFLA:</b>	International Federation of Library Associations and Institutions
<b>ITU:</b>	International Telecommunications Union
<b>LIASA:</b>	Library and Information Association of South Africa
<b>LIS:</b>	Library and Information Services
<b>MBPS:</b>	Megabits per second
<b>NCLIS:</b>	National Council of Library and Information Services
<b>NLSA:</b>	National Library of South Africa
<b>PoPI:</b>	Protection of Personal Information
<b>SABINET:</b>	South African Bibliographic Information Network
<b>SERVQUAL:</b>	Service Quality
<b>SITA:</b>	State Information Technology Agency
<b>SLIMS:</b>	SITA Library Management System
<b>UNESCO:</b>	United Nations Educational, Scientific and Cultural Organisation
<b>UNISA:</b>	University of South Africa
<b>USAASA:</b>	Universal Service Access Agency of South Africa

## CHAPTER 1

### INTRODUCTION AND BACKGROUND TO THE STUDY

#### 1.1 INTRODUCTION

Internet access to citizens has become a necessary tool for global participation. However, the mode of global communication is a limitation on telecommunication infrastructure. According to Bertot, Jaeger, McClure, Wright and Jensen (2009:14), the challenge of telecommunication infrastructure is global, although it is more evident in under-developed countries. There is a competition on the existing internet infrastructure among various industries or sectors of society. These include sectors such as education, government and the private sector. It is against this backdrop that legislation exists to help set parameters for these sectors. The set parameters govern access and use of this commodity across all sectors (La Rue 2012:1).

According to the American Library Association (2009:4), public libraries are seen by many as their first choice for their internet access needs. This is due to the fact that public libraries are public institutions funded by the public and their services are offered free of charge or with a minimal fee. However, these public libraries receive their connection to the internet from their parent institutions or bodies. The mode of connectivity and the capacity provided to these libraries are dependent on the affordability or scope of the parent institutions. This results in public libraries using different modes or channels to connect to the internet. The allocated bandwidth capacity would also differ from library to library. This limitation poses a critical challenge to public libraries to sustain the internet access provided to them. These same constraints will also have an impact on the users.

## **1.2 CONCEPTUALISING PUBLIC LIBRARIES AND INTERNET ACCESS**

### **1.2.1 Defining public libraries**

The International Federation of Library Associations and Institutions (IFLA) (2001) defines a public library as an organisation established, supported and funded by the community, either through local, regional or national government or through some other form of community organisation. It provides access to knowledge, information and works of the imagination through a range of resources and services and is equally available to all members of the community regardless of race, nationality, age, gender, religion, language, disability, economic and employment status and educational attainment (Gill 2001:15).

Public libraries are characterised by the following aspects (Gill 2001:15):

- They are funded by the government or taxes
- They are open to all and every community member can access the collection
- They are entirely voluntary in that no one is ever forced to use the services provided

The Public Library Service (2001:1) also defines a public library as an organisation established, supported and funded by the community, either through local, regional or national government or through some other form of community organisation. It further states that a public library provides access to knowledge, information and works of the imagination through a range of resources and services and is equally available to all members of the community regardless of race, nationality, age, gender, religion, language, disability, economic and employment status and educational attainment.

The existence of public libraries and their evolution as national institutions have been around for centuries. Globally, early public libraries started with donations or

were bequeathed by parishes, churches, schools or towns (Lerner 2009). These social and institutional libraries formed the base of many academic and public library collections of today. According to Lerner (2009:125), the true public library as known today came into being as a response to the needs of an evolving democratic society. These libraries were originally created and intended for use by the wealthy communities. Lerner (2009:25) further asserts that public libraries in the Western countries have recently devolved from an instrument of education intended to uplift the working class into a cultural and recreational facility for the middle class. The recreational role of public libraries is now being enjoyed by people irrespective of their social standing in society.

#### **1.2.1.1 Services offered by public libraries**

Libraries generally provide information based on the specificity and speciality of the clientele they serve. Public libraries on the other hand, usually have a diverse community with various information needs. This may affect the level and intensity of information provided.

According to IFLA/UNESCO (1994:2), public library services are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language and social status. Consistent to the IFLA/UNESCO principle of access for all, Bundy (2005) affirms that public libraries have a unique multidimensional 'cradle to grave' user range, diversity of demand, actual and potential educational, informational, cultural, technological, social capital and democratic impact. To address this diversity, according to IFLA/UNESCO (1994) and Bundy (2005), public libraries are endeavoured to render the following services:

##### **1.2.1.1.1 Information (reference) services**

- Libraries cover all information needs for their users. Local, business and scientific information can be found.

- Enquiries on other subjects, such as fun, health, culture and everyday problems can be made from the library.
- Different sources of information such as dictionaries, reference books, yearbooks, maps, online databases and resources on CDs or DVDs are available in the library

#### **1.2.1.1.2 Books, journals and magazines**

- Libraries offer a huge range of fiction and non-fiction books in different types, such as paper books, audio books, books in large print.
- Books not available in the local library can be borrowed from other libraries through inter-loan.
- Newspapers, magazines, journals, DVDs and CDs with movies are also available.

#### **1.2.1.1.3 Special services**

These include services such as

- internet access
- databases
- photocopying and printing
- computer training for children and adults
- internet usage training in groups or in one-on-one sessions
- mobile library services
- braille for the visually impaired
- games and toys

#### **1.2.1.1.4 Lifelong learning**

- Libraries cater for users' educational needs. Books and resources covering users' needs are found in the library.
- Qualified library staff are available to assist with searching and choosing the best materials to develop ones' skills and hobbies.

- Workshops and materials on developing one's skills are also provided

#### **1.2.1.1.5 Cultural and social activities**

- A public library is a key agency in the local community for collection, preservation and promotion of local culture and its diversity.
- Libraries provide focus for cultural and artistic development in a community.
- Libraries offer displays, organise cultural events and meetings.
- In a library, one can also join the reading group and have the opportunity to meet people.

Core to the public library services are the following key principles as identified by IFLA/UNESCO (1994):

- Creating and strengthening reading habits in children from an early age
- Supporting both individual and self-conducted education as well as formal education at all levels
- Providing opportunities for personal creative development
- Stimulating the imagination and creativity of children and young people
- Promoting awareness of cultural heritage, appreciation of the arts, scientific achievements and innovations
- Providing access to cultural expressions of all performing arts
- Fostering inter-cultural dialogue and favouring cultural diversity
- Supporting the oral tradition
- Ensuring access for citizens to all sorts of community information
- Providing adequate information services to local enterprises, associations and interest groups
- Facilitating the development of information and computer literacy skills
- Supporting and participating in literacy activities and programmes for all age groups, and initiating such activities, if necessary

It is through these services that public libraries are seen as playing an important role in providing free access to diverse informational, educational and recreational resources. Salman, Mugwisi and Mostert (2017:3) posit that despite the provision of these vital services, public libraries are plagued by several challenges affecting both the kind of services delivered and the utilisation of available services.

### **1.2.2 The internet**

On the other hand, the introduction of the internet in the 1960s and the World Wide Web in the 1990s has revolutionised the way in which the information and recreational resources are managed and accessed. Parent and Cruickshank (2009:91) affirm this notion by maintaining that the internet has a transformative influence on the way in which information is accessed and shared around the world and its impact varies from country to country. They further indicate that the internet has become a social networking platform that is driving communication and information sharing among people.

It is not surprising that public libraries were among the early adopters of internet-based technologies (Bertot, Jaeger, Langa & McClure 2006:1). This is mainly due to the fact that libraries are at the forefront of bridging the digital divide as they have been networking and sharing resources all along amid poor funding. The internet landscape brought opportunities not only to the elite, but also across the broad spectrum of the population.

The internet is defined as a global system of interconnected computer networks that use the standard internet protocol suite (TCP/IP) to link several billion devices worldwide (Leiner, Cerf, Clark, Kahn, Kleinrock, Lynch, Postel, Roberts & Wolff 2012:11; ITU 2013:2). The ITU (2013:2) explains the internet as the global information system that:

- is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons



- is able to support communications using the Transmission Control Protocol/internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols
- provides, uses or makes accessible, either publicly or privately, high-level services layered on the communications and related infrastructure described herein.

It can be deduced from the two definitions that the internet as maintained by ITU (2013:2) is a network of networks that consists of millions of private, public, academic, business and government networks of local to global scope. These are linked by a broad array of electronic, wireless and optical networking technologies. Connection to the internet can be done either through pulling cables across or through wireless connectivity. An example of a commonly used wired internet connectivity apart from diginet connection, is the Asymmetric Digital Subscriber Line (ADSL). Diginet connections are more stable than the ADSL. Among the various types of wireless connectivity are microwave, 3G, 4G, Edge and VSat (satellite) (Parent & Cruickshank 2009; ITU 2010, Leiner et al. 2012; Hill 2013). These modes of connectivity differ in terms of infrastructure requirements, connection speed, latency and stability. Satellite technology has proven to supersede all the other wireless connections (Telkom 2016:6).

Today, the internet is a worldwide platform for information dissemination and a medium for collaboration and interaction between individuals and computers, irrespective of their geographic location.

Critical to the functioning of the internet as an information infrastructure, is the World Wide Web (WWW) or simply the Web. The World Wide Web is one aspect of the internet that allows users to read and write via computers connected to the internet. The term is often mistakenly used as a synonym for the internet itself, but the Web is a service that operates over the internet, just as e-mail also does (Leiner et al. 2012; ITU 2013). In other words, the Web uses the internet as its

infrastructure to, among other things, broadcast information and to support peer-to-peer networks for file sharing and telephony.

### **1.2.2.1 Internet-based services offered by public libraries**

Access to the internet can be provided for a range of functions from browsing the library catalogue to conducting research. According to the ALA (2009), libraries serve a unique and important role in providing free access to all types of information and telecommunications services. Introduction of the internet contributed immensely to public libraries enabling them to re-model their services. Nowadays, the majority of services provided by public libraries are through the use of internet. These internet or web-based services include:

#### **1.2.2.1.1 Online or web-based library catalogues**

An online library catalogue is a system accessible through the internet that allows a user to consult the holdings of a library. Through this catalogue, a user can easily find out if the book, journal or other material he/she is looking for is present in a specific library (Harrison & Ormes 2013). The objectives of a library catalogue are to enable a user to find a book or journal when one of the authors, the title or the subject is known; to show what the library has by a given author, on a given subject, in a given kind of literature; and to assist in the choice of material as to the edition or as to its characteristic.

The main functions of a library catalogue as identified by Landesman (1987:86) are to enable the library users to determine:

- whether the library has a certain item
- which works by a particular author are in the collection
- which editions of a particular work the library has
- what materials the library has on a particular subject

### **1.2.2.1.2 E-Books**

According to Computer Hope (2018), an e-book is a book published in an electronic format that allows instant access to the content through download over the internet and to be read on the computer or by using equipment capable of reading it. This equipment includes, e-reader, smartphone, or tablet. Public libraries provide access to these e-books as well as e-book readers such as kindle.

### **1.2.2.1.3 e-Government**

Public libraries provide users with government information online. These e-government services include the following:

- Access to and assistance in navigating e-government websites
- Assistance in filling in forms and sending e-mails related to obtaining forms
- Assistance in writing employment letters and CVs, completing employment and unemployment applications, and searching employment databases
- Assistance in applying for further education and training
- Locating government information such as government assistance and grants (Bertot et al. 2009)

### **1.2.2.1.4 E-mail**

Harrison & Ormes (2013) maintain that the internet is not purely a source of information, but also a means of communication; hence, many users would want to use it to send and receive messages. One aspect of this communication is an e-mail facility. An e-mail is not just for personal correspondence, but also a means of obtaining information. For example, online book groups, forums and chats run on e-mail, as do many support groups. For lifelong learning, e-mail can be used to allow learners and lecturers or supervisors to communicate.

Chat lines, mailing lists and bulletin boards are similar to an e-mail. All these operate in real time. Messages are received and responded to by people who are online in the chat room at the same time. Like bulletin boards and mailing lists, they can be a very useful source of information where people with mutual interests can exchange ideas (Harrison & Ormes 2013).

#### **1.2.2.1.5 Downloading**

Downloading of material from the web can be done either to the computer's hard drive or to removable disks. The former can be problematic for security reasons because of the danger of viruses and because many files take a long time to download and can thus tie up the computer for an unacceptable length of time. Harrison & Ormes (2013) attest that allowing users to download to removable disks carries some risks, particularly if users are permitted to use their own disks.

Many libraries only allow downloading to disks which they sell and which have been pre-formatted and checked for viruses, or they require users to submit their disks to be virus checked before use on the library's computers. It should be noted also that copyright applies to material on the internet and users should be made aware of this (Harrison & Ormes 2013).

#### **1.2.2.1.6 E-commerce**

E-commerce, or electronic commerce, is the exchange or transfer of funds via the internet or a local area network. Kalakota & Whinston (1996) further define e-commerce as the buying and selling of information, products and services via computer networks, today and in the future, using any one of the myriad networks that make up the internet. The e-commerce practice is most common for businesses offering goods and services via the internet and accepting online payments by credit/debit cards or secured accounts.

According to the ALA (2009), libraries are increasingly adopting e-commerce to accept the payment of fines and fees by library patrons, collect funds for the sale of books or other product or service a library chooses to offer, or to make purchases from vendors of books, journals, supplies or equipment. This e-commerce package also includes e-reserve, database access to full-text journals, e-texts, online interlibrary loan ordering and delivery.

#### **1.2.2.1.7 Games**

Public libraries also offer games to the community's youth. Gaming is an interactive service to which young people are particularly drawn. Harrison & Ormes (2013) argue that like chat rooms, games tend to be addictive and can cause people to book the library's computer for a longer period.

### **1.2.3 Sustainability of internet access**

Access to the Internet has become increasingly an integral part of societal needs not only in South Africa but also across the globe. According to the Internet World Statistics (2017), South Africa has a low percentage of Internet access in comparison to Australia, United States, United Kingdom and Japan. Critical to internet access is the sustainability of this commodity. Three sustainability aspects namely, financial, socio-cultural and technical are briefly discussed:

#### **1.2.3.1 Financial sustainability**

The cost of providing internet access to public libraries should be balanced against the resources available to pay for it. Currently, the cost of providing internet access in South Africa is generally still high. This is articulated in Business Day (2018) that South Africa is closer to making affordable broadband available after the Independent Communications Authority of SA (ICASA) published regulations to this effect. Like other sectors of the economy, the high cost of Internet access

impacts negatively on the budget allocated to public libraries. Since public libraries are funded by government, the economic downturn and re-prioritisation of services also adversely affect provision of internet access to these libraries.

As Abu Bakar & Putri (2013:88) put it, one of the ways that public libraries could secure a sustainable operating funding is to ensure that they keep up with the priorities of the government. This may include supporting small businesses and entrepreneurs with the provision of e-resources such as databases on market trends and information on relevant legislation, employment by providing resources for career planning, job search and upgrading skills (Abu Bakar & Putri 2013:89).

### **1.2.3.2 Technical sustainability**

Another key challenge to internet access is the assurance of consistent access without a break in broadband services. Access to the internet can be done through pulling cables (wired) across or via wireless connectivity. Wired connectivity such as Diginet and Asymmetric Digital Subscriber Line (ADSL) are more stable than their wireless counterparts (Parent & Cruickshank 2009; ITU 2010). Unavailability of wired infrastructure in most rural areas of South Africa prompted internet service providers to provide alternative wireless connectivity. Claire (2017:16) affirms that although wired internet is available in most urban and surrounding areas, its coverage does not extend to many rural areas. Equally, to get reliable wired internet access, one needed to live relatively close to one's service provider and this further limit one's access to the internet (HughesNet 2017).

However, among the wireless access technologies Satellite connection proved to supersede all the other wireless connections (Telkom 2016:6). Generally, these modes of connectivity differ in terms of infrastructure requirements, connection speed, latency and stability. Public libraries especially those with wireless connection will continue to get breaks in internet access until such time that wired infrastructure is extended to them.

### **1.2.3.3 Socio-cultural sustainability**

According to (Uimonen 1997), the sociocultural aspects of the Internet are not restricted to the domains of language and content alone but to also the worldviews and styles of social interaction. Souter & MacLean (2012:13) affirm that the social dimension of the internet emphasises poverty reduction, improvements in the quality of education, health, housing and other aspects of individual and community welfare, and enhancements in the quality of social interaction, engagement and empowerment.

The Internet has comprehensively changed the ways in which individuals and organisations can access information, conduct research and exploit the work of others to meet their requirements (Uimonen 1997; Souter & MacLean 2012:13). Information resources that were previously to be accessed only from public libraries have been made freely available through the internet. This vast array of information has led to the problem of information overload for many users than information deficit (Souter & MacLean 2012:14). The ability to bypass legal and conventional constraints on the Internet has undermined the effectiveness of both types of constraint within society as a whole (Souter & MacLean 2012:14). This has resulted in for examples, widespread non-compliance with copyright, which undermines the sustainability of intellectual property rules, and widespread access to pornography, which was previously constrained by a mixture of legal rules and social norms.

On the other hand, self-publishing of content and publicising one's views on the internet has promoted the communication of more diverse voices, and this in turn has reduced the authority of established media and other sources. Souter & MaLean (2012:14) however, argue that this approach gives people the choice to select the voices that they want to hear. It has also reduced the communal experience of news and entertainment that was once the norm.

Generally, public libraries have embraced the importance of the internet since the early 1990s (Bertot, Jaeger, Langa, & McClure 2006:1). Countries or governments that have invested in public libraries to deliver services through information and communications technologies (ICTs) have seen a return on investment by producing a wide variety of positive community development outcomes (La Rue 2012:2). Such countries include Scandinavian/Nordic United States, Chile, Jamaica, Moldova, Poland, Lithuania and Uganda. Larsen (2006:1) argues that Scandinavian countries, like their western world counterparts, are highly developed and are at the forefront in terms of exploiting ICT. Public libraries in these countries are transformed into networking service points with the aim of integrating value-adding information in people's everyday lives. On the contrary, penetration of ICT, especially the internet, remains a challenge to most of the African countries (Mutula 2001; Nzivo 2012; Sulah 2012; Wanas 2012; Radijeng 2013).

### **1.3 CONTEXTUAL SETTING**

Various types of libraries exist in South Africa and these provide information services to various organisations. There are academic libraries, school libraries, special libraries (which include government and private organisations) and public or community libraries. The focus of this section is on public libraries in South Africa.

The history of South Africa and South African public libraries is well documented. As the purpose of this study is not a historical investigation of public libraries in South Africa, an in-depth report on the history of South African public libraries does not fall within the scope of this research and, therefore, will not be discussed. This has been covered by authors such as Taylor (1967), Lor (1998), Leach (1998), Kalley (2000), Dick (2007) and Ralebipi-Simela (2015). However, it is important to emphasise the inequalities within which public libraries in South Africa are developed in order to understand the current public library setting.



### **1.3.1 Public libraries in South Africa**

According to Statistics South Africa (2018), South Africa's population is diverse and is composed of Africans, whites, coloureds and Indians/Asians. Most of the white population is Afrikaans or English speaking. Other smaller groups are of German, French, Italian and Portuguese descent, among others. The black population is also diverse. This population diversity was further entrenched by the past laws of racial segregation, which led to inequality in South African society. Like the rest of the country, the establishment of public libraries for all racial groups suffered under these laws.

Ralebipi (1989) posits that, according to historical accounts, there were no libraries or prototypes of libraries in South Africa before the 18th century. She further indicates that the idea of a library was developed and acted upon by a Cape settler of Dutch descent named Joachim von Dessin. Westra and Zaaiman (1991) affirm that it was Von Dessin's collection of about 4500 volumes covering theology, law, medicine, philosophy, mathematics, natural history, geography and philology that formed the seed of the collection of the oldest cultural institution, the South African Library in Cape Town, in 1818.

Taylor (1967:64) concurs that the first library services in South Africa were initiated by whites for whites. This is supported by Mostert (1999:1) who explains that these library development initiatives were concentrated mainly in European (white) communities. According to Taylor (1967:64), only when the Carnegie commissioners visited South Africa in 1927 was the need for library services to non-white communities recognised. The Carnegie Corporation gave grants to initiate these services, which began in the late 1930s. The Carnegie Commission recommended that a free library system to serve all sections of the community be established and that library services to all other ethnic groups should be started (Von Beck, 1997:165).

These efforts at servicing the entire population were a positive step, but were not long lasting. Mostert (1999:19) writes that although several library service points were in operation countrywide for the “non-white” race groups, services for the black population fell into total disarray due to the lack of financial support when they were transferred from the provincial councils to the Department of Native Affairs in 1954. This was done mainly with the purpose of furthering the segregation laws. Von Beck (1997:180) confirms that after the National Party came into power in 1948, the library system for whites grew, but this growth was at the expense of facilities accessible to blacks. However, after 1948, the policies enforced by the South African government resulted in the development of an advanced system of library services for the privileged white minority, while those for blacks were left largely underdeveloped (Mostert 1999:19).

Positive socio-political change in the public library system has been evident since the mid-1990s as a result of the democratic dispensation (Stilwell 2008). It was not until the end of apartheid in 1994 that equal access to all public libraries by all populations was guaranteed by the Constitution of the Republic of South Africa. The new laws guaranteed all persons equal, non-discriminatory access to public services. However, this impulse towards change has also been subjected to many setbacks due to the legacies of apartheid. Among the setbacks, as the Department of Arts and Culture (2014) outlines, is that the location of many public libraries has been influenced by former apartheid spatial planning with the result that many areas, such as former townships, informal settlements and rural areas, are under-served or not served at all.

The recapitalisation programme introduced by government, as outlined in the LIS Transformation Charter (DAC 2014), made huge strides in developing and improving public libraries in the country. Old buildings were refurbished and new library buildings were erected (National Library of South Africa 2012). These add up to a total of 1 993 public libraries scattered over the nine provinces of South

Africa, 381 of which are metropolitan libraries (Ledwaba 2013; Department of Arts and Culture 2015).

### **1.3.2 Regulatory framework**

Public libraries in South Africa function under a regulated framework. Among the legislation governing public libraries are the following:

- The Constitution (Act No. 108 of 1996) describes the legislative framework for the governance of LIS in South Africa. It clearly states that libraries, other than national libraries, are a provincial responsibility. Therefore, each of the nine provinces is obliged to develop a legislative framework within which public library and information services can be provided.
- The Copyright Act (Act No. 98 of 1978, amended 1992) protects all literary, musical and artistic works, whether in written, printed or digital form.
- The National Archives of South Africa Act (Act No. 43 of 1996) provides for a National Archives, the proper management and care of the records of government bodies, and the preservation and use of a national archival heritage.
- The Films and Publication Act (Act No. 65 of 1996) regulates the distribution of certain publications.
- The Legal Deposit Act (Act No. 54 of 1997) requires producers and publishers of published material to deposit a certain number of copies of their publications in the five legal deposit libraries. It also requires a Legal Deposit Committee to be responsible for coordinating and promoting implementation.
- The South African Library for the Blind Act (Act No. 91 of 1998), the first of its kind in the country, provides separate legislation for LIS to blind and print-handicapped people in South Africa through the Library for the Blind in Grahamstown, Eastern Cape.

- The National Library of South Africa Act (Act No. 92 of 1998) focuses on the information needs of the nation in order to enhance the development and delivery of effective library programmes, services and products.
- The Promotion of Access to Information Act (Act No. 2 of 2000) aims to foster a culture of transparency and accountability in public and private bodies through citizens' right to access to information, and also to empower people to gain access to information that will enable them to exercise and protect their rights.
- The National Council for Libraries and Information Services Act (Act No. 6 of 2001) provides for a council to advise the Minister of Arts and Culture on LIS issues. The council interacts with all LIS role players (at local, provincial or national level) and, most importantly, advises on policy as well as operational matters across the entire LIS; therefore, it is best placed to deal with issues of coordination.

A detailed discussion on the legislative framework is provided in chapter 3. Despite that public libraries are built from the competencies of the provincial governments, their policies come from the national government.

#### **1.4 STATEMENT OF THE PROBLEM**

Developments in ICTs have created a digital revolution that is changing the way institutions work and communicate (Grosch 1995:1). Advanced equipment and gadgets make the flow of communication more efficient and much faster. On the other hand, bridging the digital divide requires that internet access be made available across communities (Bertot, McDermott, Lincoln, Real & Peterson 2011:10). The lack of internet access in most rural areas prompted the communities to divert their attention to public libraries for this commodity. According to Bertot et al. (2011:10), the provision of internet access to public libraries has proven to be a key factor in bridging the digital divide. Unfortunately,

the ability of public libraries to meet these community needs is in jeopardy because of inadequate broadband capacity and infrastructure.

Apart from inadequate infrastructure, the provision of internet access to public libraries is faced with sustainability challenges. Currently, the provision of internet access to public libraries in South Africa is heavily dependent on several telecommunications companies with no sustainability plans built into this service (Ledwaba & Tsebe 2012; World Public Library 2015). In other words, subscriptions to internet access from telecommunications companies are only for a limited duration and upon expiry, a new service provider would come in with the new set of equipment.

The implication is that each provincial library service has the prerogative to choose any service provider or telecommunications company of their choice. This results in standardisation challenges in terms of the bandwidth capacity, mode of connectivity and lack of internet connectivity to some public libraries. Equal to these challenges is the uncertainty regarding the continuation of access to internet by these libraries.

Studies on public libraries and internet access have been conducted across the globe (Berryman 2004; Baltrūnas, Lileikaitė, Rutkauskienė 2008; American Library Association 2009; Larsen 2012; Radijeng 2013). However, these studies focused more on internet access and use in public libraries than on investigating the sustainability of internet access to public libraries. No studies on the provision of sustainable internet access to public libraries have been conducted in South Africa. It is against this background that the researcher attempts to investigate how public libraries in South Africa can have sustainable access to the internet.

## **1.5 AIM, OBJECTIVES OF THE STUDY AND RESEARCH QUESTIONS**

### **1.5.1 Aim**

The aim of this study was to investigate how sustainable internet access can be provided to public libraries in South Africa.

### **1.5.2 Objectives of the study**

The objectives of this study were:

- To ascertain the extent of public library development in South Africa
- To examine the legislative framework governing public libraries in South Africa
- To determine the level of ICT penetration in South African public libraries
- To gauge the level of internet connectivity in South African public libraries
- To identify challenges in the provision of internet access to South African public libraries
- To formulate strategies that could be implemented in the commissioning of sustainable internet access to public libraries

### **1.5.3 Research questions**

The following research questions were developed in relation to the objectives:

- What is the extent of public library development in South Africa? This question seeks to address the level of development of public libraries in South Africa.
- What are the legislative imperatives governing public libraries in South Africa? This question intends to examine legislation impacting on public libraries in South Africa.

- What is the level of ICT penetration in public libraries? The question intends to gauge the extent of ICT access and use in public libraries.
- What is the level of internet connectivity in public libraries? This question seeks to establish the extent of internet access in South African public libraries.
- What challenges are experienced in providing internet access to public libraries in South Africa? This question attempts to identify challenges faced in the provision of internet access to public libraries in South Africa.
- What strategies can be formulated in the implementation and commissioning of sustainable internet access to public libraries? This question addresses strategies that should be followed in implementing sustainable internet access to public libraries.

<b>Research objective</b>	<b>Research question</b>	<b>Data collection instruments</b>	<b>Chapter</b>
To ascertain the extent of public library development in South Africa	What is the extent of public library development in South Africa?	Literature (contextual setting)	Three Four Five Six
To examine the legislative framework governing public libraries in South Africa	What are the legislative imperatives governing public libraries in South Africa?	Literature (contextual setting)	Three Four Five Six

To determine the level of ICT penetration in South African public libraries	What is the level of ICT penetration in public libraries?	Literature Questionnaires Interviews	Two Three Four Five Six
To gauge the level of internet connectivity in South African public libraries	What is the level of internet connectivity in public libraries?	Literature Questionnaires Interviews	Three Four Five Six
To identify challenges in the provision of internet access to public libraries	What challenges are experienced in providing internet access to public libraries in South Africa?	Literature Questionnaires Interviews	Three Four Five Six
To formulate strategies that should be implemented in the commissioning of sustainable internet access to public libraries	What strategies can be formulated in the implementation and commissioning of sustainable internet access to public libraries?	Literature Data analysis and interpretation (Interviews and Questionnaires)	Six

Table 1.1: Illustration of the relationship between research objectives, research questions and data collection instruments



## **1.6 SIGNIFICANCE AND ORIGINALITY OF THE STUDY**

Access to information is a right that is guaranteed by Chapter 2, the Bill of Rights, enshrined in the Constitution of the Republic of South Africa (Act No. 108 of 1996). This access is further realised through the enabling legislative framework. Aabø (2005:489) attests that policy choices about cultural and educational institutions, such as public libraries, are made in a political context. Furthermore, De Witte & Geys (2011:322) purport that the library efficiency is affected by the ideological stance of the government. Furthermore

Apart from the supreme law of the country, the Constitution of the Republic of South Africa, provision of access to information in South Africa follows enacted laws that include the Copyright Act (Act No. 98 of 1978, amended 1992), the National Archives of South Africa Act (Act No. 43 of 1996), the Films and Publication Act (Act No. 65 of 1996), the Legal Deposit Act (Act No. 54 of 1997), the South African Library for the Blind Act (Act No. 91 of 1998), the National Library of South Africa Act (Act No. 92 of 1998), the Promotion of Access to Information Act (Act No. 2 of 2000) and the National Council for Libraries and Information Services Act (Act No. 6 of 2001).

As a result, public libraries serve as the platform on which information is disseminated and accessible to communities. Funded and built by government, public libraries are mandated to provide for free information services to communities they serve. Government information, community information, employment opportunities, agricultural information as well as educational information are among the services provided to communities by public libraries. If public libraries have internet access, communities can access all services without having to travel far for these documents. By so doing, public libraries will be fulfilling the legislative responsibilities required of them.

Social research is stimulated by at least three major questions, namely policy problems, problems of social philosophy and problems central to developing scientific disciplines (Chadwick, Bahr & Albrecht, 1984:31). The first issue deals with societal problems, whereas the remaining two issues relate to the intellectual growth of a particular discipline.

This study is interdisciplinary in the sense that, apart from contributing to the intellectual discourse, it seeks to address the telecommunications sector in relation to public libraries as well as the service delivery component. The use of telecommunications services especially the internet, in public libraries widens the provision of information services to communities. This is particularly the case where information services and documents are provided online without having to physically visit the library. Of significant importance is that the study contributes to policy development and reforms.

Studies on public libraries and internet access across the globe have been published. These include studies by Berryman (2004) in Australia, Baltrūnas, Lileikaitė, Rutkauskienė (2008) in Lithuania, American Library Association (2009), Parent and Cruickshank (2009) in the United States, La Rue (2012) in Chile and Larsen (2012) in the Nordic countries. Similar studies were also conducted on the African continent among others Algeria (Bakelli 2012), Kenya (Mutula 2001; Nzivo 2012), Uganda (Mwesige 2008; Sulah 2012), Egypt (Wanas 2012) and Botswana (Radijeng 2013). However, these studies focused more on internet access and use in public libraries than on investigating the sustainability of internet access to public libraries. No studies on the provision of sustainable internet access to public libraries have been conducted in South Africa. This study explored mechanisms that lead to internet sustainability in public libraries.

It is therefore essential that this study be undertaken to unravel the complexities inherent in providing sustainable internet access to public libraries in South Africa.

The outcome would lead to proper planning and better ways of ensuring sustainable internet access.

Generally, internet access is a critical tool that facilitates information sharing regardless of platform and geographic location. It is through this medium that the world is reduced to a village where everyone can participate. Unequal development and the cost of accessing this commodity prohibit a huge population to access the internet (Parent & Cruickshank 2009:94).

It is for this reason that communities look to public libraries for help. On the other hand, public libraries face challenges associated with internet connectivity, especially because they are expected to provide internet access free of charge or with minimal charges (National Library of South Africa 2012).

## **1.7 LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

An extensive literature study was conducted on the theory of public libraries and internet access. This literature survey was augmented by determining the extent of adoption and use of ICT in these public libraries. The challenges and prospects brought about by legislation on telecommunications were scrutinised.

The theoretical framework adopted for this study is the multilevel model of service quality designed by Dabholkar, Thorpe and Rentz (1996). It is a framework that is used widely in retail but is adaptable to other sectors. The framework is discussed in detail in chapter 2.

## **1.8 RESEARCH METHODOLOGY**

The research methodology was discussed based on paradigms, research approach as well as research design. These are discussed briefly below.

### **1.8.1 Paradigms**

Different paradigms in research, namely positivism, post positivism, constructivism, interpretivism and pragmatism have been crafted with the purpose of addressing theoretical questions. According to Dash (1993), these paradigms set procedures and processes for which the research enquiry is undertaken. The aim of this research project was to investigate how sustainable internet access can be provided to public libraries in South Africa. The post positivism paradigm was used as an approach to conduct this research.

### **1.8.2 Research approach**

It is accepted that the research paradigm guides the methods one uses in investigating the problem (Creswell 2009). Based on the different research methods, the qualitative and quantitative methods, which align to the survey pattern, were selected for this study.

Both qualitative and quantitative methods were chosen by the researcher to maximise the theoretical implications of research findings. It is worth emphasizing that the type of data required determines the type of research method to be used.

### **1.8.3 Research design**

The study used survey research procedure to investigate how the provision of internet access to public libraries in South Africa can be sustained. A survey design involves collecting primary data from all or part of a population to find information about how often certain variables occur, how they are distributed and how they interrelate within the population (Ngulube 2005). It involves the administration of questionnaires or interviews to relatively large groups of people who are spread over a large geographic area (Babbie & Mouton 2001; Singleton & Straits 2010:9).

A combination of data-collection tools was used, namely interviews and questionnaire, with interviews as the principal instrument. Data collected via interviews were supplemented through a questionnaire. A questionnaire was sent to sampled heads of public libraries in all nine the provinces. All nine directors of public libraries in the nine provinces constituted a target population to be interviewed.

Methodological approaches and the choice of methods used in the study are discussed in detail in chapter 4.

## 1.9 SCOPE AND LIMITATION OF THE STUDY

There are currently 1 993 public libraries scattered over the nine provinces of South Africa, 381 of which are metro libraries (Ledwaba 2013; Department of Arts and Culture 2015). Effectively, there are 1 612 provincial public libraries which are the focus of this study. The breakdown is as follows:

Table 1.2: Breakdown of libraries per province (DAC 2015)

<b>Name of the province</b>	<b>Number of libraries</b>
Eastern Cape	144
Free State	173
Gauteng	234
KwaZulu-Natal	174
Limpopo	74
Mpumalanga	111
Northern Cape	253
North West	102
Western Cape	347
<b>Total number of libraries</b>	<b>1 612</b>

The above are the provinces of South Africa and each province has a set of public libraries. The focus of this study was on all public libraries under the auspices of Provincial Library Services available in each province. This excludes public libraries that are controlled by the metropolitan councils.

## **1.10 TERMINOLOGY**

Defining terminology in research is imperative as it dispels confusion and assists in better understanding of the concepts used in research (Yusuf & Chell 2005:28). It sets out the context in which these terms are used in the research study.

### **1.10.1 Public library**

Gill (2001) defines a public library as an organisation established, supported and funded by the community, either through local, regional or national government or through some other form of community organisation. It provides access to knowledge, information and works of the imagination through a range of resources and services and is equally available to all members of the community regardless of race, nationality, age, gender, religion, language, disability, economic and employment status and educational attainment. A concise definition provided by Wikipedia (2015) is that a public library is an institution that is accessible by the general public and is generally funded from public sources, such as taxes. The terms 'public libraries' and 'community libraries' will be used interchangeably for the purpose of this research study.

### **1.10.2 The internet**

International Telecommunications Union (ITU) defines the internet as a network of networks that consists of millions of private, public, academic business and government networks, of local to global scope, that are linked by a broad array of

electronic, wireless and optical networking technologies (Hill 2013). In summary, the internet is a global system of interconnected computer networks.

### **1.10.3 Broadband**

Broadband refers to a transmission capacity that is faster than primary rate Integrated Services Digital Network (ISDN) at 1.5 or 2.0 megabits per second (ITU 2003). It is a high-capacity transmission technique using a wide range of frequencies that allows mass communication of data simultaneously.

## **1.11 THESIS STRUCTURE**

This study is organised as follows:

**Chapter 1: Introduction and background to the study.** This chapter provides the introduction; conceptual setting; contextual setting; statement of the problem; aim of the study; objectives of the study; scope and limitations of the study; significance of the study; terminology; and the organisation of the study.

**Chapter 2: Theoretical framework.** The chapter presents an outline of the models and theories on which the study is based.

**Chapter 3: Literature review.** This chapter focuses on literature review of the historical development of public libraries as well as the internet penetration in public libraries. Legislative and regulatory framework impacting on the development of these libraries in South Africa is discussed.

**Chapter 4: Research methodology.** The chapter deals with methodology used in the design of the study. It discusses research methods, approaches and data-gathering techniques used in this research project. It sets out the procedure used to carry out the study.

**Chapter 5: Presentation and interpretation of data.** The chapter presents the data that was collected through questionnaires and interviews.

**Chapter 6: Discussion of the findings**

This chapter discusses the findings of the study. An insight into the meaning of the data presented in chapter 5 is provided in this chapter.

**Chapter 7: Summary, conclusions and recommendations.** The chapter provides a discussion of the research findings. In this chapter, a conclusive picture of the study outlining outcomes and problems is presented. Recommendations for further research areas are also provided.

**1.12 SUMMARY**

This chapter introduced the study. It covered introduction, conceptual and contextual settings, statement of the problem, aim of the study, objectives of the study, scope and limitations of the study, significance of the study, terminology and thesis structure. The next chapter presents the theoretical framework.



## **CHAPTER 2**

### **THEORETICAL FRAMEWORK OF THE STUDY**

#### **2.1 INTRODUCTION**

The previous chapter gave the layout of the study by providing the background, statement of the problem, research questions, purpose of the study, terminology, research methodology and significance of the study. This chapter provides the theoretical framework of the study. It explores different theoretical models by looking at their suitability to this research study. Finally, the most suitable model is discussed in detail.

#### **2.2 USE OF A THEORETICAL FRAMEWORK IN RESEARCH**

A theoretical framework is a structure that can hold and support a theory of a research study by using an established, coherent explanation of certain phenomena and relationships (Ocholla & Le Roux 2011:1; Grant & Osanloo 2014:13). The theoretical framework consists of the selected theory or theories that underpin one's thinking about how one understands and plans to research a topic, as well as the concepts and definitions from that theory that are relevant to one's topic. A theoretical model forms the backbone of the study, considering its relationship to previous related applications.

A theoretical framework is critical to the research study and it guides research activities through its reliance on a formal theory (Ocholla & Le Roux 2011:1). Consequently, theories are constructed to explain, predict and master a phenomenon. In the research process, formulation of the research objectives vis-à-vis questions should be aligned to the framework that has been chosen. According to Ocholla and Le Roux (2011:3) and Swanson (2013), a theoretical framework strengthens the study in the following ways:

- An explicit statement of theoretical assumptions permits the reader to evaluate them critically.
- The theoretical framework connects the researcher to existing knowledge. Guided by a relevant theory, the researcher is given a basis for the hypotheses and choice of research methods.
- Articulating the theoretical assumptions of a research study forces the researcher to address questions of why and how. It permits intellectual transition from just describing an observed phenomenon to generalising about various aspects of that phenomenon.
- A theory helps the researcher to identify the limits of generalisations. A theoretical framework specifies which key variables influence a phenomenon of interest and highlight the need to examine how those key variables might differ and under what circumstances.

There are several theoretical frameworks that were adapted for research projects or studies (Alharbi & Drew 2014; Ghotbabadi, Baharun & Feiz 2012; Röcker 2010; Gallivan 2001; Moolla & Du Plessis 1997; Parasuraman, Zeithaml & Berry 1985; Rogers 1995). Theoretical frameworks that are aligned to the study are discussed in the following sections.

### **2.3 THEORETICAL FRAMEWORK THAT GUIDED THE STUDY**

This study used the service quality model as its theoretical framework. There are two main conceptualisations of service quality in the literature: one based on the disconfirmation approach (Gronroos 1984; Parasuraman et al. 1985) and the other on performance-only approach (Cronin & Taylor 1992). Several definitions of service quality have been suggested in the literature (Ghotbabadi et al. 2012; Moolla & Du Plessis 1997; Parasuraman et al. 1985). The general consensus among researchers and practitioners (Alharbi & Drew 2014; Ghotbabadi et al. 2012; Röcker 2010; Gallivan 2001) is that service quality is an elusive and abstract concept that is difficult to define and measure. In his attempt to offer a definition,

Lewis (in Moolla & Du Plessis 1997:64) defines service quality as 'how well the service delivered matches the customer's expectations'.

The Nordic school (Grönroos 1984) defines service quality using overall categorical terms that include the aspects of technical and functional quality (Ghotbabadi et al 2012:3). The American school (Parasuraman et al. 1985) on the other hand, uses descriptive terms and includes the five dimensions of reliability, responsiveness, assurance, empathy and tangibles (Brady & Cronin, 2001:44). Although both schools of thought highlight important aspects of service quality, it still seems from the literature that there is no consensus that these definitions fully capture the essence of the construct. In providing a general understanding of service quality, Pena, da Silva, Tronchin and Melleiro (2013:1228) regard quality service as the ratio of the level of service effectiveness and expectations of the user.

There are many service quality models but, as indicated in the preceding paragraph, researchers are not of one mind about these models and their measurements (Ghotbabadi et al. 2012:2). These authors further purport that four service quality dimensions, namely Nordic, SERVQUAL, multilevel and hierarchical, are mostly used and adopted models and are the basis of other service quality measurements. The ensuing sub-sections briefly discuss the four models of service quality.

### **2.3.1 Nordic model**

According to Ghotbabadi et al. (2012:3), this service quality model was first conceptualised and formed by Grönroos in 1982, with improvements in 1984. The model defines service quality by technical and functional dimensions as depicted in figure 2.1 (Grönroos 1984:38). In this model, technical quality focuses on the outcome of the service or what the customers received from their interactions with service providers to satisfy their basic needs. Functional quality or process-related

dimension represents the process which evaluates the manner of delivery of the service.

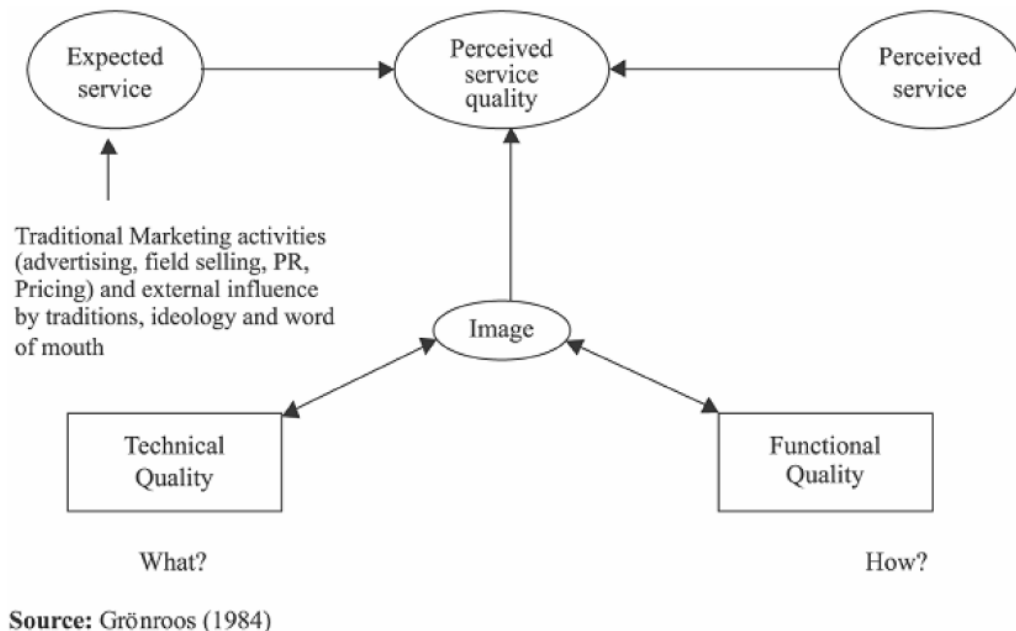


Figure 2.1 Grönroos Nordic model of service quality

The Grönroos service quality model or the Nordic model has been used to measure consumers' perception of service quality (Chaipooirutana 2008:45). The shortcoming in Grönroos' model is that it is too generic and does not offer any technique on measuring technical and functional quality (Parasuraman et al. 1985; Seth, Deshmukh & Vrat 2004; Chaipooirutana 2008).

### 2.3.2 SERVQUAL or Gap model

SERVQUAL model of service quality was developed by Parasuraman et al in an attempt to cover the weakness of the Nordic model by offering a new way for measuring service quality (Boulter & Bendell 2010:3). In the SERVQUAL model, Parasuraman et al. (1985:48) use the gap or difference between the expected level of service and the delivered level of service for measuring service quality

perception. In other words, these authors are of the view that service quality is a function of the differences between expectation and performance along the quality dimensions. In this case, their initial ten dimensions were reduced to five, namely reliability, responsiveness, assurances, empathy and tangibility (Moolla & Du Plessis 1997:65).

Parasuraman et al. concluded that the difference or gap is the result of the gaps described below (Boulter & Bendell 2010:4):

- Gap 1 is the difference between customer expectations and management's perception of those expectations.
- Gap 2 is the difference between management perceptions of customer expectations and the service quality specifications.
- Gap 3 is the difference between service quality specifications and the actual service that is delivered by service contact staff on a daily basis.
- Gap 4 is the difference between service delivery and promises made in an organisation's external communications.
- Gap 5 is the difference between the culmination of the previous 4 gaps that leads to the difference between customer expectations and customer perceptions.

Figure 2.2 below is a diagrammatic representation of the SERVQUAL model of service quality depicting the five dimensions of this model.

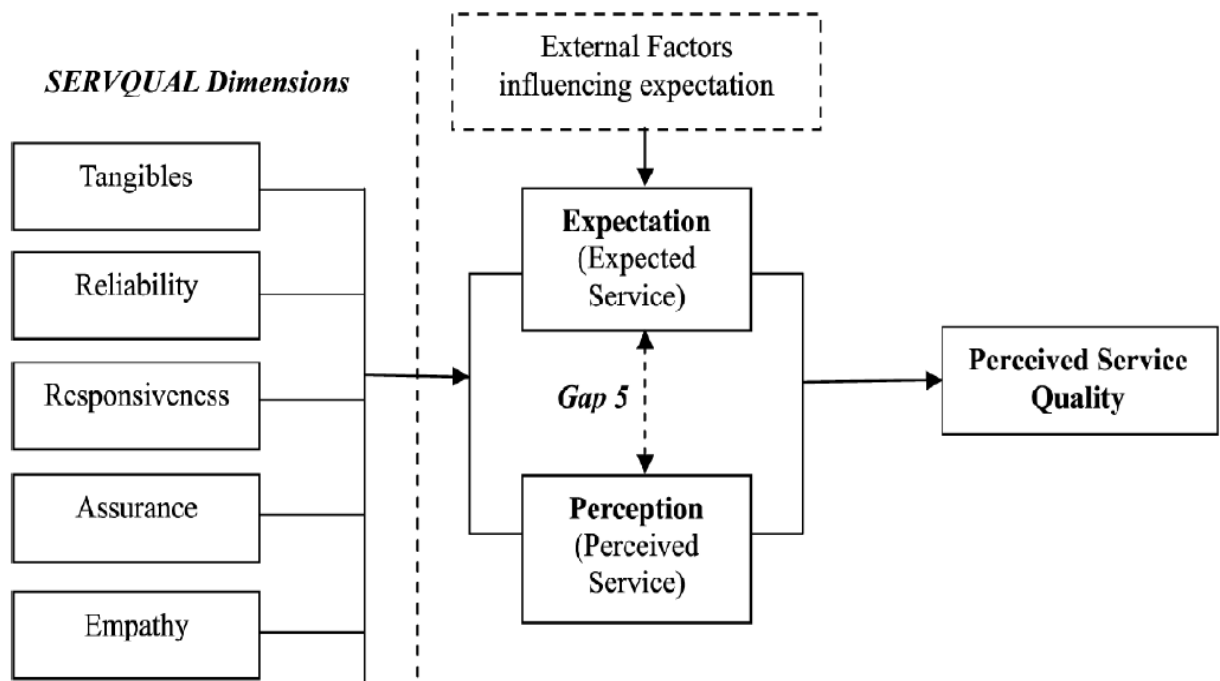


Figure 2.2 SERVQUAL model of service quality (Parasuraman et al. 1985)

### 2.3.2.1 ServQual and the public sector

SERVQUAL has been widely used in a private sector setting with limited application to public sector environment (Orwig, Pearson & Cochran 1997:54). In other words, for the private sector to survive, customer satisfaction and loyalty secured through high quality products and services are key determining factors for success (Orwig et al 1997). Although interest and the importance of this model have been shown by the public sector, quality issues inherent in the public sector have slowed down the exploration of this model (Orwig et al 1997:56; Wisniewski 2001:382). The interest in SERVQUAL model displayed by the public sector is indicative of governments' willingness to run public sector along business lines. Exploration of this model contributes immensely to the surveys usually conducted to measure customer perceptions of the service. A number of studies on the application of SERVQUAL in the public sector have been conducted (Orwig et al 1997; Wisniewski 2001; Iyikal & Celebi 2016).

### **2.3.2.2 ServQual and the public libraries**

Nejati & Nejati (2008:574) define the concept of service quality in the library as the difference between library user's expectations and perceptions towards service performance. Based on this definition, Zakaria, Hussin, Noordin, Sawal, Alhady, Zakaria & Zakaria (2011:267) argue that service quality is about what public library users receive from public library services that leads to their behaviour and satisfaction towards the services. Many studies (Proctor, Usherwood & Sobczyk 1997; Nejati & Nejati 2008; Zakaria et al 2011; Paul 2014) on service quality in public libraries have been conducted across the globe.

### **2.3.2.3 ServQual and South Africa**

The deregulation of the South African economy has led to influx in the establishment of businesses. This created an intensified competition among businesses to seek profitable ways to differentiate themselves (Dhurup, Venter & Oosthuizen 2005:140). More energy became channeled towards the quality of services and goods. As a result, many studies were done (Bick, Brown & Abratt; Ntshingila 2013; Vilakazi & Govender 2014; Pitt, Berthon, Prendegast & Nel 2015) on the service quality in South Africa, particularly in the retail sector.

### **2.3.3 Multilevel or Retail Service Quality Scale model**

This model for service quality was developed by Dabholkar, Thorpe and Rentz in 1996 upon realising that SERVQUAL factors are inconsistent and not comprehensive for different applications (Seth et al. 2004:924). Dabholkar, Thorpe and Rentz (1996) found that the SERVQUAL model has not been fully applied to measure the service quality of retail stores and as a result developed the model for retail environment (Chaipoopirutana 2008:48). They suggested changing the structure of service quality models to a three-stage model, namely overall

perceptions of service quality, primary dimensions and sub-dimensions as depicted in figure 2.3 (Dabholkar, Thorpe & Rentz 1996:7).

According to Dabholkar et al. (1996:8), retail service quality has a hierarchical structure comprising five basic dimensions, namely:

- Physical aspects – appearance and layout
- Reliability – kept promises
- Personal interaction – personnel being courteous, helpful and inspire confidence in customers
- Problem solving – personnel being capable of handling customers' problems and complaints
- Policy – policy implications and adherence

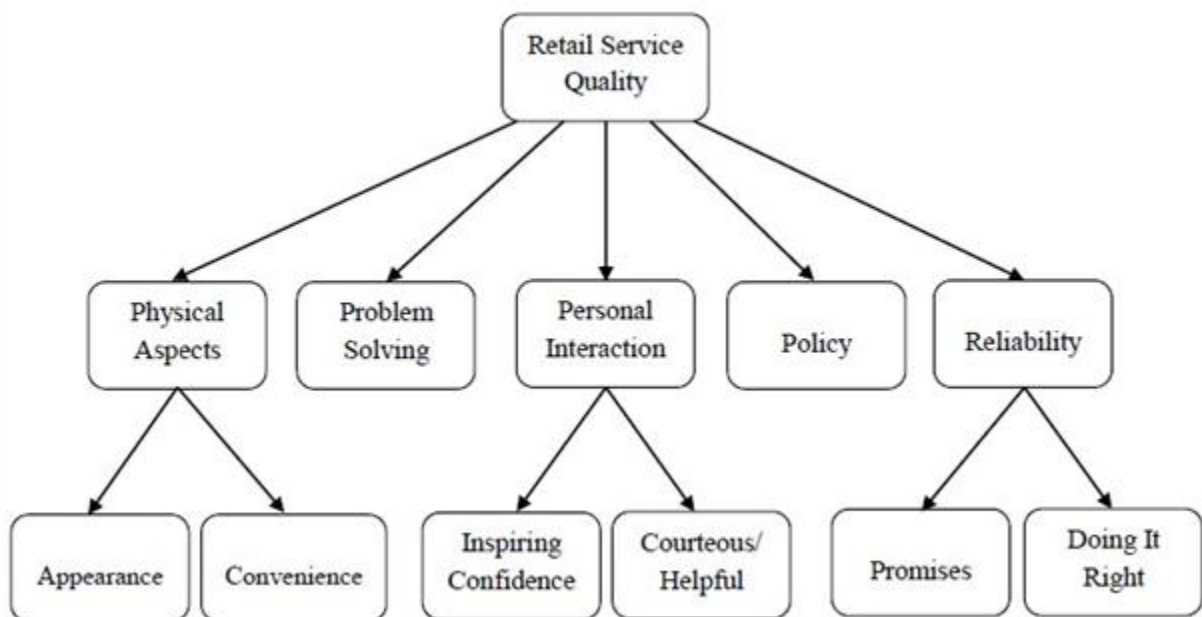


Figure 2.3 Multilevel model of service quality (Dabholkar et al. 1996)

Chaipoopirutana (2008:48) argues that although the multilevel model proposes a new structure, it needs to generalise for different areas and consider the effect of some other factors such as environment and price.



### **2.3.4 Hierarchical model**

In this model, Brady and Cronin (2001:36) conceptualised the five dimensions of the Dabholkar multilevel model into three dimensions and proposed nine sub-dimensions (Figure 2.4). According to Chaipooirutana (2008:48), Brady & Cronin combined the three-component model by Rust & Oliver (1994) and the multilevel conceptualisation of service quality by Dabholkar et al. (1996). The model suggests that service quality is formed by three primary dimensions, namely interaction quality, physical environment quality and outcome quality (Brady & Cronin 2001:34). They construed these three dimensions as factors that primarily determine service quality.

Brady & Cronin (2001) further indicate that each of these dimensions is formed by three corresponding sub-dimensions such as attitude, behaviour and experience (interaction quality), ambient conditions, design and social factors (physical environment quality), waiting time, tangibles and valence (outcome quality) (Brady & Cronin 2001:36). Therefore, perceived service quality is the result of a multi-level evaluation where the customers first evaluate the primary dimensions based on the sub-dimensions.

Moreover, the reflective hierarchical model allows an approach to service quality with 'customer reality' in mind, i.e. it is uncertain whether customers judge service quality attributes and overall evaluation of service quality separately, and whether they extrapolate their overall attitude to the individual service areas or encounters.

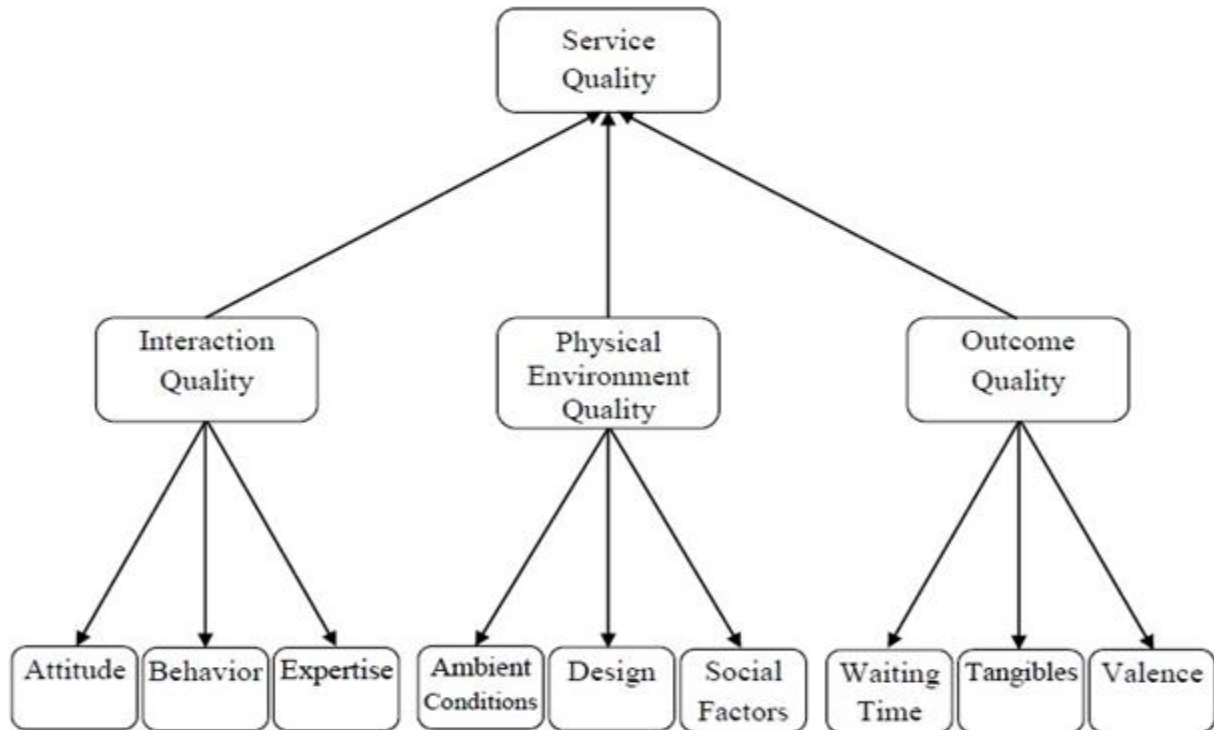


Figure 2.4 is the diagrammatic representation of the Brady and Cronin hierarchical model.

The hierarchical model as depicted in figure 2.4 illustrates that service quality perception is multilevel and multidimensional.

## 2.4 CHOICE OF THEORETICAL FRAMEWORK

The theoretical frameworks discussed above relate to service quality applicable to different industries. In the proceeding discussions, theoretical framework that addresses the research enquiry is identified and discussed.

### 2.4.1 Context

The choice of a theoretical framework for this study is to a large extent informed by the South African national broadband policy framework premised in the Electronic Communications Act, 36 of 2005 (ECA), which is the primary and broad

framework governing the electronic communications industry in South Africa. This policy framework attempts to address various aspects of ICTs for development. This act, among others, aims at:

- promoting and facilitating the convergence of telecommunications, broadcasting, information technologies and other services contemplated in it
- promoting and facilitating the development of interoperable and interconnected electronic networks, the provision of the services contemplated in the act and to create a technologically neutral licensee framework
- promoting the universal provision of electronic communications networks and electronic communications services and connectivity for all
- encouraging investment, including strategic infrastructure investment, and innovation in the communications sector
- providing a clear allocation of roles and assignment of tasks between policy formulation and regulation within the ICT sector
- ensuring that broadcasting services and electronic communications services, viewed collectively, are provided by persons or groups of persons from a diverse range of communities in the republic
- ensuring the provision of a variety of quality electronic communications services at reasonable prices
- ensuring information security and network reliability
- promoting the development of public, commercial and community broadcasting services which are responsive to the needs of the public
- promoting an environment of open, fair and non-discriminatory access to broadcasting services, electronic communication networks and to electronic communications services (ECA 36 of 2005).

Based on these policy assertions, it becomes imperative for this study to apply a theoretical framework that addresses service quality with policy imperative. The

theoretical framework adopted for this study is based on Dabholkar et al.'s (1996) multilevel model of service quality. It is a framework that is used widely in retail but is adaptable to other sectors. It has a hierarchical structure with five dimensions. In this model, service quality is viewed as a higher-order factor defined by two additional levels of attributes, namely dimension and sub-dimension levels (Polyakova & Mirza 2015:68).

This model has been identified as suitable for this study because of its strong theoretical background, satisfactory empirical validations and suitability for application to different service industries. This model is used in the study to specify the categories of factors (physical, problem solving, personal, policy and reliability) affecting the provision of sustainable internet access to public libraries in South Africa. All these factors are applicable in addressing the research objectives as discussed in sub-sections 2.5.1 to 2.5.5. Application of the multilevel model of service quality also addresses the research enquiry.

#### **2.4.2 Studies that used Dabholkar et al.'s multilevel model of service quality**

Several authors have applied Dabholkar et al.'s model of service quality in their studies as depicted in table 2.1. The model has been used in different fields of study although it was originally developed for the retail industry. Table 2.1 below indicates some of the authors who used the multilevel model of service quality in their research studies. The studies were selected based on their focus areas namely, library environment and retail industry. This was done to demonstrate the applicability of this model across various sectors.

<b>Theoretical framework or model</b>	<b>Author</b>	<b>Title</b>	<b>Domain</b>
Multilevel model of service quality	Wilson, K. (2015)	Does Competition Affect Quality? A Study of internet Service Provision	Internet service provision
Multilevel model of service quality	Kiran, K. & Diljit, S. (2012)	Modelling web-based library service quality	Library and Information Services
Multilevel model of service quality	Kim, Y. (2001)	A study of understanding the impact of the physical environment on perceived service quality in the hotel industry	MA in Business Management
Multilevel model of service quality	Siu, N.Y.M. & Cheung, J.T. (2001)	A measure of retail service quality	Retail store
Multilevel model of service quality	Kim, S. & Jin, B. (2002)	Validating the retail service quality scale for US and Korean customers of discount stores: an exploratory study	Retail store
Multilevel model of service quality	Ndhlovu, T. (2013)	The relationship between service quality, customer satisfaction	Retail

		and customer loyalty in the retail supermarket industry	
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Table 2.1: Studies that used the Dabholkar multilevel theoretical framework

## 2.5 APPLICATION OF MULTILEVEL SERVICE QUALITY MODEL IN THE STUDY

This section examines the factors of the multilevel model of service quality within the context of this study. The study attempts to explore the provision of sustainable internet access to public libraries in South Africa and Dabholkar et al.'s multilevel model of service quality seems most suited to address the research objectives. These objectives are best captured by the Dabholkar et al. (1996) dimensions of service quality, namely:

- Dimension 1 – Personal interaction with the customer
- Dimension 2 – Reliability of service delivery to the customer
- Dimension 3 – Problem-solving for the customer
- Dimension 4 – Policy issues with respect to the customer
- Dimension 5 – Physical aspects of the relationship with the customer

These dimensions have sub-dimensions linked to them (table 2.2).

Dimensions	Sub-dimensions
Physical aspect	Appearance
	Convenience and layout
Reliability	Promises
	Doing things right
Personal interaction	Courteous and helpful
	Inspire confidence and trust

Problem-solving	
Policy	

Table 2.2: The five dimensions and sub-dimensions of the Dabholkar et al. multilevel model

The relevance of each of these five retail dimensions as they relate to the provision of sustainable internet access to public libraries in South Africa is discussed.

### **2.5.1 Dimension 1: Personal interaction with service provision**

Dabholkar et al. (1996:6) suggest that in a retail service situation, personal interactions give employees an opportunity to instil confidence in customers that they have made the right choice about where to shop. It also allows employees to demonstrate the ability to help the consumer with questions or problems (Bloese & Tankersley 2004:78). The personal interaction dimension is the grouping of SERVQUAL's responsiveness, assurance and empathy dimensions.

This dimension measures customers' perceptions of whether internet service providers (ISP) personnel do inspire confidence by being courteous and helpful (Dabholkar et al. 1996:7). The personal interaction dimension also plays a role in determining the service quality of internet access in public libraries. Internet service providers (ISP) interact with public libraries to address their daily internet connection problems. However, personal interaction with the internet service provider (ISP) is minimal because most technical problems are solved online.

Bloese and Tankersley (2004:79) conclude that whether these interactions occur over the telephone, face to face or on an interactive web page, the extent to which ISP personnel exhibit the ability to handle such matters effectively and whether they appear to care about tending to the consumer's request should have an impact on perceptions of service quality. Gellings in Bloese and Tankersley (2004:78) affirms that customers welcome the opportunity to talk to knowledgeable

service representatives. Regular reporting meetings also encourage personal interaction with public libraries as clients.

### **2.5.2 Dimension 2: Reliability of service**

Dabholkar et al. (1996:7) define reliability as the extent to which the retail service provides what was promised when it was promised. The reliability dimension is similar to the SERVQUAL reliability dimension; the difference being that it has two sub-dimensions of promise and doing it right (Dabholkar et al. 1996:7). In other words, reliability translates to keeping promises and doing it right. This dimension plays a significant role in the provision of internet access. Typically, the provision of internet access is continuous and clients expect non-interruption of this service. Any interruptions indicate a lack of reliability on behalf of the ISP and create negative perceptions and decreased customer satisfaction among the customers.

Furthermore, failure by the ISP to keep its promises or do things in the correct way might result in customers defecting to competition and, in the process, spreading negative opinions by word of mouth. The extent to which such provision is continuous serves as a good indicator of reliability. As reliance on internet access increases, expectations for reliability also increase. As argued by the Corporation for National Research Initiatives (1998:1), these expectations are driving clients to negotiate with their internet service providers for guarantees that will meet client requirements for specific quality-of-service levels.

However, this poses a number of problems (Corporation for National Research Initiatives 1998:1), such as the following:

- Users' perception of service quality can extend end to end; that is, remote networks that extend beyond the responsibility of the customer's ISP can dictate application-level service quality.



- Reaching agreement can be a complex and time-consuming task, encumbered by the myriad possible metrics that define service quality and the lack of any common definitions for these metrics.
- There are no agreed-upon methodologies in place for measuring and monitoring negotiated metrics for compliance

In mitigating these challenges, a service level agreement, which details continuity mechanisms of internet access, might be entered into with the public libraries. However, the extent to which service personnel consistently and conveniently arrive and carry out their duties as scheduled should impact on consumer perceptions of service reliability.

### **2.5.3 Dimension 3: Problem-solving in service provision**

Problem solving refers to an organisation's ability to show genuine and sincere interest in solving customers' problems and the employees' ability to handle complaints directly and instantly (Beneke, Lykiardopoulos, De Villiers & Rawoot 2011:30). This dimension of service provision addresses the handling of clients' problems and complaints. The ability of ISP personnel to attend to the queries presented to them is one part, but being able to resolve them is critical.

Westbrook in Dabholkar et al. (1996:7) argues that customers are quite sensitive to how service providers attend to problems and complaints. This is affirmed by Huang (2009:30) that customers develop more positive and favourable perceptions of the organisations that show genuine interest in solving their problems and complaints over those who do not. Beneke et al. (2011:30) conclude that organisations need to establish effective measures that can be implemented in order to handle customer problems and complaints and these measures can take the form of customer care lines, helpful personnel, customer service desks as well as a website. In this case, ISPs have a range of help facilities aimed at resolving customers' queries.

#### **2.5.4 Dimension 4: Policy choices in service provision**

Dabholkar et al. (1996:7) suggest that the extent to which a store's policies influence consumer quality perceptions is directly related to whether the adopted policies meet customers' needs. Similarly, policies that relate to the provision of internet access would be expected to influence public libraries' clients' quality perceptions. There are a number of policy choices that the ISP should make with respect to meeting customer needs. These include applying an internet fair use policy and blocking of undesired sites such as pornographic material.

On the other hand, ISPs should adhere to regulatory framework governing the sector. These include (Cull 2009:5):

- Electronic Communications Act, 36 of 2005 (ECA)
- ICASA Act, 13 of 2000 (ICASA Act);
- Broadcasting Act, 4 of 1999 (Broadcasting Act); and
- Electronic Communications and Transactions Act, 25 of 2002 (the ECT Act)
- Protection of Personal Information Act, 4 of 2013 (PoPI Act)
- National Broadband Policy
- National Radio Frequency Spectrum Policy

Similarly, public libraries should also adhere to available access policies and procedures. They in turn have their own policies that regulate their operations.

Generally, the extent to which an organisation's policies respond to customer needs would be an important factor in the customers' perceptions of service quality (Blose & Tankersley 2004:81).

#### **2.5.5 Dimension 5: Physical aspects of service quality**

According to Dabholkar et al. (1996:6-7), the physical aspects dimension has a wider meaning than the SERVQUAL tangibles dimension. The dimension includes

not only the appearance of physical facilities, but also the convenience provided to the customer by the store layout. Blose and Tankersley (2004:81) argue that the appearance of a store and the convenience of its layout are physical aspects of a retail service that have an impact on perceived service quality. A physical presence is important, especially when the customer needs to interact with the ISP.

In this instance, the customer will reflect on the physical location of the ISP, that is, whether the ISP operates from a small kiosk manned by one or two people on certain hours or in a standalone office park manned by full-time personnel. Information of this nature would influence the customer's perception about stability and permanency of the ISP. A stable and permanent residency boosts customer perception and avoids a derogatory phrase of being a 'fly-by-night' service provider.

The service under investigation or research determines the type of service quality dimensions to be used. Therefore, it is appropriate to adapt the scale to the service being studied (Vàzquez, Rodriguz-Del Bosque, MaDaz & Ruiz 2001:2).

## **2.6 SUMMARY**

This chapter discussed various service quality theoretical models, namely Nordic model, SERVQUAL model, multilevel or RSQS model and hierarchical model. Based on the nature of the research inquiry, the multilevel or RSQS model proved to be the most suitable model for this study. Reasons for the choice of this framework were also advanced.

The next chapter presents the literature review. It looks at what literature says about the provision of sustainable internet access to public libraries, from international and continental perspectives to the South African environment.

## CHAPTER 3

### LITERATURE REVIEW

#### 3.1 INTRODUCTION

The previous chapter dealt with the theoretical framework of the study by entrenching theories applicable to this research study. Since the study is interdisciplinary and aims at contributing to the intellectual discourse, it is essential that the research done in the area of internet access and public libraries be scrutinised in order to identify what has been written in this area. By so doing, the researcher will be placing the study within the context of the general body of scientific knowledge (Babbie & Mouton, 2001:565).

In quoting Neuman, Ngoepe (2012:41) purports that “the first step in narrowing a topic into a researchable question is to examine what the literature says about it”. The statement endorses the crucial role played by literature review in the scientific study. In other words, a literature review is a report of existing literature that evaluates studies peculiar to the researcher’s selected area of study. It reviews, analyses and integrates research studies conducted in a particular field of study. Boote and Beile (2005:3) affirm that a literature review gives a theoretical basis for the research and helps shape the research study.

Although the form of literature review may vary with different types of studies, the basic purposes remain constant. These basic purposes as proposed by Taylor are further expanded by Kumar (2005:32) and Boote and Beile (2005:6) when they assert that a literature review:

- provides a context for the research
- justifies the research
- ensures the research has not been done before
- shows where the current research fits into the existing body of knowledge

- outlines gaps in previous research
- illustrates how the subject has been studied previously
- enables the researcher to learn from previous theory on the subject

Babbie and Mouton (2001:103) concur with assertions made by Taylor (2000) and Boote and Beile (2005) that literature review addresses the following questions:

- What have other scholars written about the topic under study?
- What theories address it and what do they say?
- What methodologies/approaches have been used previously?
- Are there consistent findings or do past studies disagree?

It can be deduced from these assertions that literature review forms a framework on which research study is based.

This chapter provides a literature review pertaining to public libraries and internet access broadly and to the South African environment in particular. It is organised according to the following themes:

- The role of public libraries in society
- Legislative framework governing public libraries
- ICT integration in public libraries
- Level of internet connectivity in public libraries
- Internet-based technologies and their effects on public library services

### **3.2 THE ROLE OF PUBLIC LIBRARIES IN SOCIETY**

Singh (2015:2) posits that “*public libraries are primarily institutions of basic learning with a mission of providing collection and services to meet information needs of the local community*”.

His statement is encapsulated in the joint manifesto of IFLA and United Nations Educational, Scientific and Cultural Organisation (UNESCO), which considers the public library as the local gateway to knowledge, one that provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social group (IFLA/UNESCO 1994). The statement by IFLA/UNESCO underpins the founding principles of public libraries across the globe. That is, public libraries were established with the primary purpose of providing resources and services in different formats to meet the needs of individuals and groups for information, education and recreation (Gill 2001:1). Furthermore, the manifesto recommends that the public library should be a living force to improve the active role of citizens in society, allowing access to more education, culture and information (IFLA/UNESCO 1994).

The IFLA/UNESCO guidelines for development (Gill 2001:2) and IFLA/UNESCO manifesto (1994) identify the following aspects as key functions of a public library:

### **3.2.1 Educational role**

According to Shukla, Singh and Mishra (2013:1), education and library are two inseparable indivisible concepts, both being fundamentally and synchronically related to and co-existent with each other. That is, one cannot be separated from the other. They further argue that education cannot exist alone in the absence of a library and the library has no meaning if it cannot impart education. Helling (2012:1) corroborate this assertion by saying that public libraries throughout history have been used to educate, indoctrinate, homogenise or empower their patrons. This is mainly because they serve as centres of education in society. In pre-revolution Russia, for example, public libraries were seen as cultural conduits through which the lower classes could be indoctrinated with the values of the upper classes (Helling 2012:2). He further posits that early public libraries in the United Kingdom (UK) were used to moralise military forces to correct the so-called 'wrong' idea of socialism. The socialism idea was regarded as 'wrong' or poisonous by the

United Kingdom because it was against the capitalism mode of economy, which was the way of life in the UK.

Libraries were first introduced in the North-American colonies with the aim of educating the settlers in the new world (Krolak 2005:15). In Hawaii, public libraries were seen as alternatives to the prevailing drinking culture (Helling 2012:3). On the other hand, the United States public libraries were offering literacy services dating back to 1963 in an effort to educate the nation and to prepare the people for statehood by 'Americanising' them (Krolak 2005; Helling 2012).

Chatterjee (2013:47) purports that:

*“With the low rate of literacy and the rising level of inequality in annual income among the various social classes in India, public libraries act as the source of public education where readers can utilise the books and literature for self-improvement”.*

In Slovenia, public libraries were among the first providers of intergenerational lifelong learning processes that included children, youth and adults who came together and learned from each other by exchanging knowledge, experiences and viewpoints (Adams, Krolak, Kupidura, & Pangerc Pahernik 2002:30). In Nigeria, public libraries provide necessary materials such as textbooks, journals, magazines and exercise books related to the curriculum of the existing literacy institutions in the community, be it conventional schools or adult classes (Akparobore 2011:3).

Baratedi in International Network for the Availability of Scientific Publications (INASP) (2000:125) argues that, in Botswana, the increase in literacy levels and the need to retain the literacy skills acquired through literacy classes have created an awareness within communities of the need to sustain a general reading culture. Kenyans saw the benefit of public libraries through the introduction of the camel

mobile library and the book-box scheme, which indicated that the use of these services contributed to increasing the success of students in their examinations (Issak 2000:6). In South Africa, a study conducted by Fourie and Kruger (1994) on secondary school pupils revealed that these learners use the library with a dual objective, namely for curricular as well as extra-curricular activities.

### **3.2.2 Cultural aspect**

Dim and Osadebe (2009:46) define cultural heritage as the legacies of physical artefacts and intangible attributes of a group or society that are inherited from past generations and are maintained in the present for the benefit of future generations. They further allude that preserving the cultural, historical and scientific heritage of various world nations and their thorough presentation has been a long-term commitment of library and information centres (Dim & Osadebe 2009:47). Gill (2001:7) corroborates that the role of the public library is to provide a focus for cultural and artistic development in the community and to help shape and support the cultural identity of the community.

The cultural role requires that the library's contribution should be reflective of the variety of cultures available in the community. The public library should provide materials in the languages spoken and read in the local community, and should support cultural traditions (Gill 2001:7). IFLA/UNESCO (1994) and Venkatappaiah (2007:72-73) indicate that public libraries in a developing society should adhere to the following prescripts:

- Preserve cultural heritage
- Provide access to all forms of cultural expression
- Make efforts to foster inter-cultural dialogue
- Favour cultural diversity
- Support oral tradition



Setshwane and Oats (2015:2) concur that public libraries in Botswana are custodians of the local and national culture and are storing popular and academic knowledge and material for current and future generations. Cultural information and knowledge exist across the globe. In Nigeria, for example, this knowledge is helpful in such areas as agriculture, nutrition, health and recreation (Ugwoke & Omekwu 2013:17). Scholars, adventurers and fortune seekers in India regarded the country as an epicentre of culture and scholarships, birthplace of great art and architecture, languages, literature and philosophies hitherto unknown to the Western world and were keen on utilising public libraries to preserve this heritage (Chatterjee 2013:54). According to Braeckmanraeckman (2010:4), European public libraries bring digital content to local communities, covering current topics in the community, delivered in a local style of language, culture and images. They can engage in an emotional interaction in topics and content through face-to-face contact with people. On the other hand, Illsley (2010:9) argues that South African public libraries can play a key role in the cultural preservation of the entire nation by adding more indigenous language materials to their collections.

### **3.2.3 Social role**

Gill (2001:21) maintains that the use of the library for research and for finding information relating to the user's education and leisure interests, brings people into informal contact with other members of the community. Gill and a working group consisting of members of the committee of the Public Libraries Section of IFLA, further emphasise the social role of the public library as a meeting place of communities and as a place of informal contact between community members. Mugwisi, Jiyane and Fombad (2016:3) affirm that public libraries are better equipped than fee-paying institutions such as schools and universities to provide a convenient space free of charge, conducive to studying; a learning environment for students and learners and other needy people, for information access and use, for group discussions, school assignments and projects. Hart (in Mugwisi et al.

2016:3) maintains that many schools in South Africa do not have functional libraries and as a result, space in public libraries is of great value.

Koontz and Barbara in Alvim and Calixto (2013:5) attest that the public library is an excellent public meeting space where informal education, culture and research for information come together and provide people with a positive social experience. Skot-Hansen, Rasmussen and Jochumsen (2013:15) cite the Garage (Garaget) in Malmo (Sweden) as an example of a local library that plays an active role in boosting this type of local identity and cohesion. Audunson (2005:435) purports that Norway needs arenas that can provide a minimum community in values, meeting places where people can meet, communicate and be active together across generations and social and ethnic belongings as well as arenas for debate and discussion on social and political issues. In his argument, public libraries are suited for this function.

According to Alvim and Calixto (2013:6), in Portugal, meetings in public libraries are arranged with neighbours, friends, different people, politicians, authors and colleagues. On the contrary, municipal libraries in townships were used to plan protests, debate political strategy and exchange banned material during the apartheid era in South Africa (Dick 2007:20).

#### **3.2.4. Recreational role**

According to Harrison (1979:51), recreation is a life function that is just as important as work. The benefits go far beyond simply enjoyment and amusement, as it is an essential form of relaxation for some people, it helps to relieve stress and provides a break from the pressures of everyday life. Furthermore, the opportunities offered by libraries, in addition to providing access to books and other recreational materials such as videos and games, enhance people's leisure time by giving them the chance to socialise by providing access to various activities

(Harrison 1979:52). Public libraries offer a wealth of opportunities for recreational reading, viewing and listening. For example, public libraries in South Africa have a collection of games and toys; therefore, children and adults often rely on them for leisure (NLSA 2015).

Public library recreational offerings may also include special programmes, author visits, movie nights and other opportunities. Chatterjee (2013:47) indicates that public libraries in India aim to provide a source of entertainment and recreation for their users through relaxation and knowledge indulgence by infusing inspiration into its users to have better achievement in life, to have deeper knowledge about things and to rise higher in success by way of organising discussions, celebrations, workshops and cultural shows. He further notes that other mass media like television and radio also run on the same objective as these public libraries and have a greater interest-sustaining quotient from the perspective of the audience (Chatterjee 2013:48).

In carrying out their role in society, public libraries serve several key functions, namely (Levien 2011:12):

- Collect
  - Select, acquire, organise, curate, retain and maintain collections of physical media, including text, audio, video and multimedia, and virtual collections of online media
- Circulate
  - Provide media from its physical collections to library patrons and to other libraries, or provide access to selected online resources to which the library subscribes
- Borrow
  - Obtain media from other libraries for local patrons
- Catalogue

- Create a catalogue or catalogues of the library's physical collections or create portals to online collections of materials especially relevant to the library's patrons
- Provide access to catalogues
  - Enable patrons to access catalogues of other libraries' collections or other libraries' topical portals
- Provide reference service
  - Help patrons find information both in locally maintained collections of materials and in the many resources available online
- Offer reader advice
  - Recommend reading or viewing appropriate to a patron's interests, age and capabilities (including service to those who are blind or print disabled, e.g. South African Library for the Blind)
- Provide access to computers, the internet and advanced media technologies
  - Offer patrons access to computers and the internet with basic technical support, as well as to other current technologies (e.g. making photocopies, typing and printing)
  - Serve as "media spaces" so patrons can freely engage with a wide range of local and internet-based media such as games, e-books, audio, video and multimedia
- Serve children
  - Develop and offer special services, such as story time for children
- Provide exhibit space and offer programmes and exhibits
  - Organise special programmes and exhibits, in-house and online, attuned to the interests of the local community. Some of these may be age neutral; others may target specific age groups
- Provide reading rooms
  - Offer a quiet, safe place to browse and use media from the local collections and to work individually on homework or other projects.
- Provide meeting rooms and convene meetings

- Offer spaces for meetings of patrons and convene meetings on subjects of interest to the community
- Serve as a community centre and symbol
  - Provide a facility for community gatherings and symbolize the community's commitment to accessibility of informational and cultural materials for all.

However, these functions as envisaged by IFLA/UNESCO remained central to the establishment of public libraries in different countries even before the manifesto was published (Berryman 2004; Bertot et al. 2011; Larsen 2012; Wanas 2012; State Library of Queensland 2013). To this day, public libraries in different countries embrace these functions in their activities.

### **3.3 LEGISLATIVE FRAMEWORK IMPACTING ON PUBLIC LIBRARIES**

The IFLA/UNESCO Public Library Manifesto (1994) states:

*“The public library is the responsibility of local and national authorities. It must be supported by specific legislation and financed by national and local governments. It has to be an essential component of any long-term strategy for culture, information provision, literacy and education.”*

Legislation governing public libraries exists in many countries across the globe in line with the IFLA/UNESCO Public Library Manifesto. Key to the existence of legislation is ensuring that public libraries are developed within the policies and framework of a particular country. In Canada, the Public Libraries Act of 1990 governs the existence of public libraries in the country across spheres of government (Helling 2012). For example, this act gives powers to municipalities to establish local public libraries. Finland, the Netherlands and Norway have national legislation on public libraries, making it compulsory for local governments to uphold a public library service (Krolak 2005). On the other hand, Krolak (2005) states that

the USA has the most decentralised legislative structure, resulting in greater differences between local governments in allocating resources.

Like in other Asian countries, where it does exist, library legislation in Africa is generally not at a national level (Abbas 2009). However, the legislative framework governing South African public libraries operates at national level (National Library of South Africa 2015).

To provide a contextual understanding of the current setting in South Africa, it is worth mentioning that the country has three spheres of government, namely national, provincial and local. Although public libraries are coordinated at national level, they remain a provincial competency as declared in Part A of Schedule 5 of the South African Constitution (NLSA 2015:27). This means that provinces are fully responsible for the provision and funding of public libraries. However, municipalities own the library buildings and collections and employ staff, and by doing so, they are still funding public libraries. Prior to these constitutional provisions, this function was shared between provinces and local authorities in terms of provincial ordinances of the four old provinces (Dick 2007).

There was no legal provision for provinces to standardise funding and assistance to public libraries; hence, assistance differed among provinces. Some provinces provided financial assistance and infrastructure, whereas others offered little assistance or could not assist public libraries at all (South African Public Library and Information Bill 2013:23). It was for this reason that these libraries sought donor funding to help them survive. This resulted in the decline of services and infrastructure, especially to those libraries that were not receiving proper assistance. Since 1994, efforts have been made to build new public libraries and to upgrade historically less equipped library facilities throughout the country in an attempt to address the legacy of the past (NLSA 2012). This was to a large extent a concerted effort by government through an enabling legislative framework.

Like other sectors of the country, the South African Library and Information services (LIS) sector functions within a set of legislative framework. This affirms the relationship that public libraries have with government. The following is a discussion of the legislation relevant to public libraries:

### **3.3.1 Constitution of the Republic of South Africa**

The Constitution of the Republic of South Africa, Act No. 108 of 1996 (constitution), is the supreme law of the country. Chapter 2 of the constitution encompasses the bill of rights applicable to citizens of the republic. Enshrined in the bill of rights is the right of access to information. Chapter 2(32) stresses that:

- Everyone has the right of access to any information held by the state and,
- any information that is held by another person and that is required for the exercise or protection of any rights

In the Bill of Rights, the rights to education and access to information play a significant role in the LIS sector. Fourie (2003) affirms that the right of access to information seeks to counter the impact of the pre-1994 era of legally enforced separate structures for education and public libraries for different racial groups. It is against this backdrop that the national Department of Arts and Culture (DAC) is tasked with the responsibility of creating, maintaining and administering the broad legislative framework for LIS at national level as required by the constitution. However, the responsibilities of public libraries remain the competency of the provincial governments.

In the same breath, the constitution of India is meant to fulfil hopes and ambitions of the citizens by ensuring their basic rights and liberties and by establishing proper resources to them (Chatterjee 2013:45). Chatterjee further indicates that the aim of a public library is to offer free and wide access to information and knowledge to every group of readers, irrespective of their background, which in

the end facilitates the social, cultural and economic welfare and progress of a country in support of the constitution.

### **3.3.2 The National Council for Library and Information Services Act**

The National Council for Library and Information Services Act, No. 6 of 2001, gives way to the establishment of the National Council for Library and Information Services (NCLIS). The role of NCLIS is to inform and advise Minister of Arts and Culture, Minister of Basic Education and Minister of Higher Education and Training on the following matters relating to libraries (NCLIS 2001):

- The development and coordination of library and information services
- The promotion of coordination among library and information services
- Legislation affecting library and information services
- Policies, principles and criteria that should govern the allocation of public funds for library and information services
- Existing adequacies and deficiencies of library and information resources, including literature in African languages and services
- The effectiveness of library and information science education and training
- Service priorities after consultation with any organ of state responsible for library and information services and other interested parties
- The promotion of basic and functional literacy, and information literacy and a culture of reading
- Ways in which new information and communication technologies should be harnessed to achieve improved integration, equity, cost-effectiveness and quality in library and information services

In performing the tasks above, the council must:

- coordinate responses of the library and information services sector with library and information services matters



- liaise and develop synergy with other bodies and councils with regard to library and information services matters
- play an advocacy role in the library and information services matters
- investigate incentives for donations to libraries

In short, the NCLIS serves as a focal point for coordinating policy in the LIS sector.

### **3.3.3 The National Library of South Africa Act**

The National Library of South Africa Act, No. 92 of 1998, aims to provide for the National Library of South Africa for:

- collecting
- preserving
- making available and promoting awareness of the national documentary heritage
- providing for matters connected therewith

To fulfil the aims of this act, the National Library of South Africa has to:

- build up a complete collection of published documents emanating from or relating to South Africa
- maintain and extend any other collections of published and unpublished documents with the emphasis on documents emanating from and relating to Southern Africa
- promote the optimal management of collections of published documents held in South African libraries as a national resource
- supplement the national resource with selected documents
- render a national bibliographic service and act as the national bibliographic agency
- promote optimal access to published documents, nationally and internationally

- provide reference and information services, nationally and internationally
- act as the national preservation library and provide conservation services on a national basis
- promote awareness and appreciation of the national published documentary heritage
- promote information awareness and information literacy

The act permits the National Library of South Africa to promote the development of library and information services in South Africa. To achieve this, as mandated through the functions above, the NLSA must:

- provide appropriate information services and products
- provide leadership, guidance and advise to South African libraries and information services
- undertake planning and coordination in cooperation with other library and information services
- present, in consultation and cooperation with appropriate educational institutions and professional bodies, courses of training and education relating to its functions
- undertake research and development
- liaise with libraries and other institutions in and outside South Africa

The National Library of South Africa therefore plays a critical role in the LIS sector not only in an advisory capacity, but also through coordination of libraries in the country.

### **3.3.4 The Legal Deposit Act**

The Legal Deposit Act, No. 54 of 1997, provides for the preservation of the national documentary heritage through legal deposit of published documents to

- ensure the preservation and cataloguing of, and access to, published documents emanating from, or adapted for, South Africa
- provide for access to government information
- provide for a Legal Deposit Committee
- provide for matters connected therewith

This act provides for the deposit of books, magazines and other information-bearing documents such as films, videos, music CDs and DVDs published or produced in South Africa, as well as those produced abroad. It requires that publishers must provide five copies of every book published if the print run consists of 100 or more copies. If the print run is fewer than 100 copies, only one copy is required. Copies are deposited at the designated places of legal deposit, namely the National Library of South Africa, Mangaung Library Services, Msunduzi Municipal Library, the Library of Parliament and the National Film, Video and Sound Archives.

Upon receipt of the copies, places of legal deposit would perform the following duties as prescribed by the act:

- Accession, retain and preserve
- Catalogue or inventories
- Ensure freedom of access to such documents

Performance of these duties by places of legal deposit will ensure accessibility of the documents by the citizens.

### **3.3.5 The Copyright Act**

Copyright is part of a group of intellectual property rights that provide legal protection to creators of intellectual works. Intellectual property, on the other hand, comprises all those things that come from the human intellect, whether they are

ideas, inventions, words (fact and fiction), music, theatre or art. This would include books, periodicals, pamphlets, archives, databases (whether online, CD-ROM or delivered by other mechanisms), material on the internet, individual items in a database, computer software and even inventive pieces of hardware that are subject to patent coverage (Oppenheimer 1997:353). Copyright is a right to an intellectual creation provided by the South African Copyright Act, No. 98 of 1978 (Copyright Act). In other words, the Copyright Act gives exclusive rights to an intellectual work. They are considered exclusive rights because they exclude people from certain uses. Copyright is a statutory right that allows the creator of an intellectual work to grant or prohibit others from making copies or modifications to the copyrighted work for the own benefit.

In terms of the Copyright Act, creators of intellectual works are granted the right to:

- reproduce the work
- create derivative works based on the original work
- distribute copies of the work
- perform the work
- display the work in public

Special provisions to take account of, for example educational needs, are also encapsulated in the Copyright Act. Production of copyrighted works in these special cases is allowed, provided that such reproduced material does not unreasonably prejudice the interests of the creator.

For the LIS sector, the Copyright Act does not allow a library to compile a collection of articles or extracts from works in facsimile form or place such copies on the reserve shelf and allow students to duplicate such reproductions (Walter Sisulu University 2016). However, an article from a journal, or a reasonable portion from any other work, may be copied. The copies should be made available upon request to:

- an individual for the exclusive purposes of private study or the use of the individual who has requested the work
- a lecturer for research, teaching or the preparation for teaching a class
- copy a work to replace an edition/copy which has been damaged or lost and for which an unused replacement cannot be acquired at a reasonable price
- copy an unpublished work exclusively for preservation and security purposes
- copy, upon request, the whole or a substantial portion of a copyright-protected work from the library's collection for private study or personal use, on condition that an unused edition cannot be acquired at a reasonable price (Walter Sisulu University 2016).

It is worth noting that e-mail messages, material loaded onto ftp (file transfer protocol) sites or World Wide Web servers and anything else placed on the internet are protected by copyright (Oppenheimer 1997:353). Oppenheimer (1997:353) further argues that despite his material being freely available on the internet, it does not mean that they are not copyrighted.

The Copyright Act has massive implications not only for public libraries, but also for the entire LIS sector since they deal with creations of the mind. For example, in Nigeria it is a common occurrence to see fake copies of people's work on sale on the markets and nobody pays any serious attention to it (Dim & Osadebe 2009:48). As a result, most of Nigeria's cultural heritage, especially in the area of traditional agricultural practices and medicine, are guarded jealously by their owners to avoid losing them.

### **3.3.6 The Protection of Personal Information Act**

The rationale behind the Protection of Personal Information Act (PoPI Act) is to ensure that all South African institutions conduct themselves in a responsible manner when collecting, processing, storing and sharing another entity's personal

information by holding them accountable should they abuse or compromise such personal information in any way (Workpool 2016). This task is realised through the following:

- It gives effect to the constitutional right to privacy, by safeguarding personal information when processed by a responsible party, subject to justifiable limitations
- It regulates the manner in which personal information may be processed by establishing conditions, in harmony with international standards, that prescribe the minimum threshold requirements for the lawful processing of personal information
- It provides persons with rights and remedies to protect their personal information from processing that is not in accordance with this act
- It establishes voluntary and compulsory measures, including the establishment of an information regulator, to ensure respect for and to promote, enforce and fulfil the rights protected by this Act (PoPI Act).

According to Workpool (2016), PoPI legislation considers personal information to be critical and therefore bestows certain rights of protection and the ability to exercise control over:

- when and how one chooses to share one's information – requires one's consent
- the type and extent of information one chooses to share
- transparency and accountability on how one's data will be used and notification if/when the data is compromised
- providing one with access to one's own information as well as the right to have one's data removed and/or destroyed should one so wishes
- adequate measures and controls in place to track access and prevent unauthorised people, even within the same company, from accessing one's information

- how and where one's information is stored – there must be adequate measures and controls in place to safeguard one's information to protect it from theft, or being compromised
- the integrity and continued accuracy of one's information

The PoPI Act does not only apply to individuals, but also to companies or legal entities. It is also the responsibility of individuals and entities to ensure that their data is safeguarded.

In addition to the above, there are other laws that have a bearing to LIS, namely:

- National Archives and Records Services Act, No. 43 of 1996
- State Information Technology Agency Act, No. 88 of 1998
- The South African Library for the Blind Act, No. 91 of 1998

Promotion of Access to Information Act, No. 2 of 2002

### **3.3.7 The South African Public Library and Information Services Bill**

The aims of the South African Public Library and Information Services Bill of 2010 are to:

- provide for measures to redress the inequality for the provision of public library and information services resources
- provide principles for public library and information services
- provide guidelines for the minister to determine national norms and standards in order to maintain consistency for the delivery of public library and information services
- promote access to public library and information services by providing free membership and free admission to public library and information services
- promote cooperative governance and coordination for the responsibility of public library and information services
- establish the National Public Library and Information services committee

The bill essentially provides a framework for national norms and standards for the delivery of public library and information services in the country to ensure consistency.

The enabling legislative framework bred a fertile ground for better coordination and administration of public libraries in the country taking into consideration the application of ICTs in public libraries.

### **3.4 ICT INTEGRATION IN PUBLIC LIBRARIES**

According to Islam and Islam (2006:809), ICT is a comprehensive concept and it runs parallel with information technology (IT), which denotes not only a single unit of technology but an assembly of technologies. The growth of ICT has opened the door for the libraries to make use of technological facilities for the betterment of their services. Nwabueze and Ibeh (2013:159) purport that the advent of the internet and other ICTs led to an information explosion and placed a bigger burden on libraries as custodian of information and other knowledge-based resources. This resulted in libraries facing new challenges, new competition, new demands, new expectations and a variety of information services from users tailored to their needs.

The use of ICT for library operation saves a considerable amount of time, resources and labour. It also speeds up technical processing and information services (Gill 2001; Hussain, Khan & Zaidi 2013:2). ICT has been a means to bring quality services not only to public libraries, but also to all libraries in general. Shuva (2005:161) concurs that systematic planning of its introduction and application will ensure that the technology-based information services are sustainable and enhance the ability of library.

According to Shuva (2005:159) and Nwabueze & Ibeh (2013:27), technologies for collecting, storing, processing and communicating information are divided into two



main categories, namely those that process information, such as computer systems, and those that disseminate information, such as telecommunication systems. The term Information and Communication Technology (ICT) is more commonly used to embrace these categories.

The integration of ICT in public libraries becomes more imperative in this age when advances in technology have brought in new tools with abundant benefits like ease of services, security of information resources, speed, cost control and space saving (Nwabueze & Ibeh 2013:28). According to Osuigwe (quoted in Nwabueze & Ibeh 2013:29), the benefits necessitated a move from paper to electronic media as the prevailing form of information storage, retrieval and dissemination.

Some of the advantages of ICT integration in libraries include (Cochrane in Saraf 1998:6):

- Allows easy integration of various library activities
- Facilitates cooperation and the formation of library networks
- Helps avoid duplication of efforts within a library and between libraries in a network
- Eliminates repetitive work
- Helps to increase the range of services offered
- Provides marketing opportunities to its services
- May ultimately save/generate money
- Increases efficiency
- Provide round-the-clock access and service to the user

Apart from the advantages of integrating ICTs in public libraries, there are hindrances affecting the adoption of ICTs in these libraries. These include (Singh 2015):

- Poor funding of ICT infrastructures
- Constant change of software and hardware

- Insufficient bandwidth
- Lack of technical IT knowledge by library staff
- Copyright and intellectual property rights management

Through the use of ICT, libraries globally are able to access and provide online databases across the country and worldwide, among other things (Saraf 1998; Shuva 2005; Nwabueze & Ibeh 2013). In other words, the role of the public library has changed drastically in developed countries. They are providing more cultured and user-friendly information services to their patrons. On the contrary, public libraries in developing countries are adopting these facilities at a slow pace due to a number of facts, including a shortage of funds, skilled manpower and infrastructure (Shuva 2005; Parent & Cruickshank 2009; Bertot et al. 2011).

### **3.5 EXTENT OF INTERNET ACCESS IN PUBLIC LIBRARIES**

The following is a discussion of global trends regarding the adoption of internet by public libraries. International perspectives, continental as well as local contexts are discussed.

#### **3.5.1 Global trends in internet access to public libraries**

Public libraries abroad have incorporated the use of the internet in their daily operations. According to Larsen (2006), the Nordic countries are highly developed and at the forefront when it comes to exploiting ICT possibilities in all spheres of society. Finneman (2007) further argues that the internet is continuing to penetrate these Nordic countries and it is now an integral part of the overall media structure. In the US, millions of Americans depend on public libraries for free access to the internet and the wealth of resources available online (American Library Association, 2009). The American Library Association indicates that by the year 2009 almost all American public libraries were offering free public access to

computers and the internet. In Australia, penetration of internet services in public libraries has increased the prevalence of online resources available to users (Berryman 2004). He further elaborates that the level of penetration varies from state to state. However, as he puts it, the most frequently available services on the internet are information related and these include government e-services, health care and income generating services.

On the African continent, the majority of public libraries are located in the urban and semi-urban areas (Mutula 2001; Nzivo 2012; Sulah 2012; Wanas 2012; Radijeng 2013). To some countries on the continent, the provision of internet access in public libraries remains a challenge although strides are made to provide access to this commodity. Mwesige (2008) and Sulah (2012) attest that Uganda is among the African countries that provide free internet access to the public, although this provision is at a limited scope. On the other hand, Kenya was connected to the internet in 1996, leveraging on the technological landscape taking place globally (Mutula 2001:158). This enabled public libraries to provide access to the internet as well. However, internet services in these libraries are confined to branch libraries in the urban areas of Kenya (Mutula 2001; Nzivo 2012).

Connection of Egypt to the internet, together with Peru, Fiji, Indonesia, and Costa Rica in 1993, propelled public libraries to take advantage of this technology to revamp their services (Parent & Cruickshank 2009:93). Nowadays, public libraries in Egypt provide internet access to the public free of charge, but with limitations due to the economic factors inherent in the provision of access to the internet. Radijeng (2013) alludes that the Sesigo Project, a countrywide programme, was used as a vehicle to install computers and internet for free use by the public in Botswana public libraries. Internet access is currently provided to users of public libraries free of charge.

### 3.5.2 Trends in South African public libraries

Like the rest of the world, the historical development of public libraries in South Africa also encompasses information, education and recreation roles. This origin of public libraries in South Africa has its roots in the establishment of the South African Public Library in 1818, which later merged with the State Library to become the National Library of South Africa (NLSA Act 1999). Dick (2007) explains that the foundation of public libraries in South Africa has linkages in British and Dutch colonial histories as well as the histories of 'religious, voluntary, cultural and political organisations' that shaped the growth of reading and readers and promoted the establishment of libraries, resulting in a mixed, but rich library heritage and legacy. This view was held by Witbooi (2005) who indicated that public libraries in South Africa were following the tradition of their colonial master, Britain. Ehlers (1986) purports that this history of public libraries in South Africa progressed from private reading societies to private and public subscription libraries subsidised by the government, Carnegie-funded libraries and free public libraries with legislation to secure their financial viability.

Dick (2007:14) argues that these private reading societies were comprised of missionaries whose aim was to teach reading and writing and to raise literacy levels among natives. It was not surprising that after the Queenstown subscription library was opened to the public, scores of "coloured readers turned up to the library merely to look at the pictures" (Van der Walt 1972:61). As missionary work spread across the country, more reading depots or libraries were established and more people became literate. An example of such establishment is the Wolhuter Hostel Library, which was dedicated to black mineworkers in Johannesburg (United Society for Christian Literature, n.d.:30).

It should be noted that with political landscape progression, public libraries, like other sectors in South Africa, became established along the racial lines. The Bantu Men's Social Center in Johannesburg, which became a library depot of the Non-

European Library, is one such example (Dick 2007:16). These developments were guided by the government policies of segregation (apartheid). Public libraries for Europeans (Whites) and non-Europeans, predominantly the black population, as well as coloureds and Indians were established accordingly. Areas for white population received better public library infrastructure, unlike the rest of the population. This is supported by Mostert (1999:1) who indicates that after the opening of the South African Public Library to the public in 1820, library development concentrated mainly in European communities. Public libraries in the rural population of the society were almost non-existent.

While the South African Public Library was making strides in the Cape Colony, similar developments were unfolding in the Transvaal by the State Library of the South African Republic (Satgoor 2015). She further indicates that this library was created with a donation of books from Maatschappij der Nederlandsche Letterkunde. These developments later spilt over to the rest of South Africa.

It was only in 1994 after the apartheid era that the democratic government started paying attention to these unequal developments in public libraries. This trend was also influenced by the spatial divide as could be seen in the libraries that varied from well-constructed library buildings to container libraries and mobile libraries in the then four provinces (see figure 2.1) of South Africa (Satgoor 2015). The four provinces were Cape, Natal, Orange Free State and Transvaal. On the other hand, Lor (1998) argues that the state of public libraries was subject to serious deterioration in many parts of South Africa at the beginning of the new dispensation. The two arguments project an opposing case where certain library structures were taken good care of while others were neglected. Figure 3.1 below is a depiction of the former four provinces of South Africa.

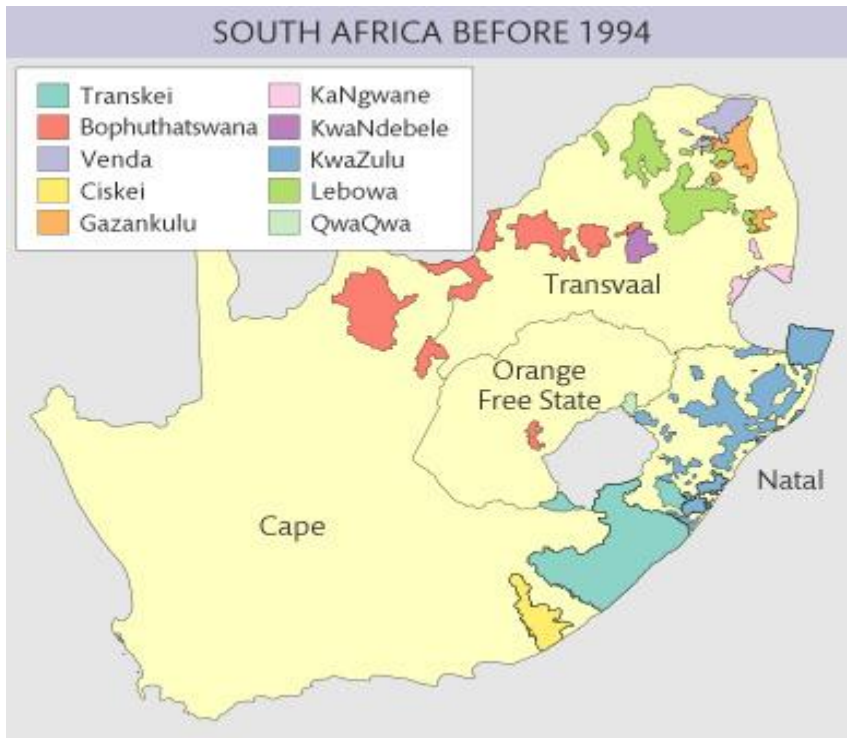


Figure 3.1 Pre-1994 provinces of South Africa (courtesy of Brand South Africa)

The bleak-painted picture of public libraries in South Africa led to the South African government through the Arts and Culture ministry to commission a report that documented the status of public libraries in the country. Noteworthy is that other parallel democratic activities were taking place in other corners of the country and by the time of this commission, South Africa was already demarcated into nine provinces (Dick 2007). These provinces are Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West, Northern Cape and Western Cape. Figure 3.2 depicts a map of these nine provinces.



Figure 3.2 Nine provinces of South Africa (Courtesy of Brand South Africa)

The outcome of the report tabled the following three key findings:

- The need for funding of library materials, ICT infrastructure, personnel and human resource training (at both library and provincial level), technical services and the maintenance of buildings and equipment. This has a huge bearing on public libraries, as limited funding is a hindrance to the growth of library collection as well as the adoption and use of ICTs to improve the library services.
- The lack of clarity in many provinces about who has the legal mandate to provide, and thus finance, public and community library services.
- A fear that municipalities, which are under serious financial pressure generally, might utilise the additional funding in other areas they see as more pressing (KPMG 2007).

The KPMG report led to the South African government embarking on a revitalisation programme for public libraries. This was followed by the commissioning of the LIS transformation charter in 2007 and the South African

Public Library and Information Services Bill in 2010. Revitalisation involved an injection of R1.3 billion by the government as an indication to show commitment to redress and revive public libraries in the country. Hart (2010:82) further adds that the government support is contingent upon public libraries playing a more dynamic role in the transformation of the South African society. One of the key activities to be accomplished by this grant was to refurbish old public library structures and to build new ones across all nine provinces of South Africa.

The grant or allocation made massive strides in the LIS sector, as, according to the NLSA (2015), by 2015 there were a total of 1 612 public libraries and 381 metropolitan libraries in the country. In contrast, there were a total of 963 public libraries for all the four provinces before 1994 (Witbooi 2005:62). The current public library distribution is depicted in chapter 1, table 1.2.

Mobile libraries are excluded from this figure, as they are outreach programmes of the public libraries concerned. The number of public libraries is not commensurate with the geographic spread of the provinces as well as the population size within a particular province. This view is supported by Witbooi (2005:66) when noting that a report commissioned by the Center for the Book on the funding of public libraries found that the number of libraries per province is not proportional to the size of the population. Table 3.2 below gives evidence of this view.

<b>Province</b>	<b>Number of public libraries</b>	<b>Population size in million</b>
Eastern Cape	144	7.0
Free State	173	2.8
Gauteng	234	13.4
KwaZulu-Natal	174	11.1
Limpopo	74	5.8



Mpumalanga	111	4.3
Northern Cape	253	1.2
North West	102	3.7
Western Cape	347	6.3
<b>Total</b>	<b>1612</b>	<b>55.7</b>

Table 3.2 Number of public libraries versus the population size per province (Statistics South Africa 2018)

It can be seen from table 3.2 that Gauteng, which has the biggest population, only has 234 public libraries. Even the Northern Cape, the province with the smallest population size, has more public libraries than Gauteng. However, it is pleasing to note that government is planning to build 20 new library buildings and upgrade 50 existing libraries during the 2015/16 financial year (NLSA 2015:4).

The policy directives and coordination of the public library network in South Africa is determined at national level, but the management of these public libraries is done at local or provincial level (Dick 2007; Hart 2010; NLSA 2015). As in other countries, less equipped public libraries in South Africa are located in rural areas. These areas are characterised by their geographic spread with low-income communities, where individuals can rarely afford the costs of ICT services (Siochrú & Girard, 2005). The common means of ICTs in these areas are the cellphones. In certain areas, however, there is no network signal and therefore the cellphone becomes a useless gadget to provide connectivity.

However, the South African government is providing internet access to these libraries despite their geographic location. Provision of internet access to public libraries is done through funding to the provinces (KPMG 2007; South African Public Library and Information Services Bill 2010). It is because of the autonomy of provinces that each province decides how public libraries are connected to the internet. Public libraries with internet access provide this service free to the users.

By the end of 2012, of the 1 612 public libraries available in the country, only 993 had internet access (National Library of South Africa, 2012).

### **3.6 INTERNET-BASED TECHNOLOGIES AND THEIR EFFECTS ON PUBLIC LIBRARIES**

According to Larsen (2012), public libraries are transformed from collection-based institutions into networking service spots in an organised library system, which is becoming ever more digital. The internet-based services brought about by advances in ICT are playing critical roles in the development of public libraries. These libraries continue to develop and enhance their online facilities and provide internet access to their users. The internet has transformed the ways and means of information services. Nwabueze and Ibeh (2013) posit that by breaking the distance barrier, the internet has also emerged as a benefit for the information seekers as well as libraries. The internet therefore is changing the way the librarian views information sources and has become a part of the library environment today.

Libraries are using the internet to support their fundamental functions and services such as acquisition, circulation, reference, classification, cataloguing and providing access to the internet as an independent service. Through the internet, e-government service delivery, education resources, services for job seekers, gaming and many more can be provided. The internet has transformed traditional public library services in the following specific ways (Futalib 2013):

- **Library management software:** Libraries utilise software designed to manage different library routines and processes. Most of this software is integrated and has modules for the different activities or tasks carried out in the library like cataloguing, circulation, acquisition processes, serials control and online public access catalogue (OPAC). Some examples of such software are Sierra, Unicorn, Sita Library Management System (SLIMS)

and ExLibris. The traditional way of managing these library processes was manually through the use of books and catalogue cards.

- Online Public Access Catalogue (OPAC) or (WebPAC): This is the computerised version of the library catalogue or a database of the library holdings. The advantage of the OPAC over manual methods is ease of use and the fact that it saves space. It provides access to the catalogues of a library on the local intranet, extranet or even the internet. In other words, it facilitates remote access to the full range of library services, including the ability to renew or reserve books and other stock, and to check the user's own borrower record. The library's catalogue being online allows users to perform basic search/browse functions from any networked PC.
- Networking: Library users can access information of various types such as online databases, e-journals, e-books and government publications digitally through networked systems. Remote access may be allowed online through the internet or intranets.
- Electronic Document Delivery: Libraries no longer rely on postal services to send documents to users or to do interlibrary lending. This is now done through electronic networks that can deliver documents in various formats, e.g. PDF, TIF and CSS straight to users' desktops or mobile devices.
- Online user education or tutorials: Libraries use the internet or CD/DVD-ROMS to educate their users or carry out information literacy programmes. Virtual tours can be offered online, making user education more convenient for all.
- E-reference services: Some services such as SDI (selective dissemination of information) or CAS (current awareness services) and virtual reference desks, announcements of new acquisitions and other reader advisory

services can be made easier through the internet. Users can have online interaction with the reference staff, e.g. through chats and fora.

- Library cooperation and resource sharing: A central union catalogue can be managed better through ICT, thus libraries can create and share bibliographic records and other information resources in digital format. SACat hosted by South African Bibliographic Network (SABINET) is such an example.
- Institutional repositories: Institutional repositories are publications that originate locally from within the university community such as theses, dissertations, reports, conference papers and seminar papers. ICT has made it possible not only to provide better access to these resources, but also to ensure the preservation of the resources. Public libraries can access these resources online seamlessly with ease.
- E-government: Public libraries are at the forefront of providing citizens with government information. Information on how to access government services such as employment forms, certificates, government notices and educational matters.
- Social media networks: Social media networks like twitter, Facebook, Instagram and LinkedIn are some interactive internet services that are currently serving as communication forum for librarians and their users. These networks can be deployed for educational and recreational uses. Discussion groups, such as listserves, blogs and Wikis also assist library services.
- Networked Library Services: Communication services on the internet are now more accessible for public use. Blogs, Wikis, Pod Casting, RSS feeds, email, instant messaging and SMS are powerful communication tools

available through the internet. These services have the capability of changing the nature and delivery of library services. SMS, e-mail and chat services are already popular among public libraries to deliver reminder, notification and reference services. Sending an SMS via an online facility is comparatively cheap or free.

- Library websites: A medium of communication for libraries to their users. Library services have traditionally used mobile libraries as a way of reaching remote users from library service points or users who are physically unable to access the library. For example, information on local community groups regarding local tourist attractions was presented with commentary together with images. With the application of ICT, the information would now be hosted on the library's website or loaded onto a CD-ROM and networked.
- Online searching: Searching of online databases like EBSCO, JSTOR and browsing or surfing the internet through search engines, such as Google and subject directories are supplementary to the library resources.

The new technology that is available today is just a new tool to produce, store and distribute information. It also makes the communication more effective and rapid. As information and knowledge institutions, public libraries in developed countries are probably among the institutions within the public sector that have been most actively involved in the digital revolution (Singh 2015).

### **3.7 CHALLENGES FACED BY PUBLIC LIBRARIES**

Public libraries play a distinctive and critical role in society as providers of free and unbiased access to the information. Despite the distinctive role played by public libraries in society, these libraries nowadays face a myriad of challenges. These range from technological challenges to challenges to obtain funding. The following are some of the challenges faced by public libraries.

### **3.7.1 Continued technological advances**

Technology is an ever-changing area and gadgets become obsolete very quickly due to the rate of technological advances, and this poses a serious challenge to public libraries. Newly published media, such as e-books, and most previously published media are available in digital form. Storage, communication, computation and display are now enabled by even more capable devices and systems (Levien 2011:10). These days storage is faster, more compact and less expensive and available in larger sizes. The rate of telecommunication technologies is also advancing at a much faster rate. The current gigabit per second services reach almost everywhere by means of a wire and wirelessly, and computation with multicore processors capable of trillions of operations per second is now available.

The rate at which technological advances requires public libraries to keep track of these developments. Failing this will result in the library becoming obsolete and irrelevant. However, it is not always possible for the library to acquire every new technology entering the market for reasons relating to funds and the stability or suitability of the product to the library environment (Parent & Cruickshank 2009). Adoption of these new technologies will be dependent on the libraries' priorities envisaged in their policies.

Public libraries, especially in developing countries face a number of problems in adopting new technologies. Many authors have mentioned slow speed of the internet, inadequate bandwidth, limited time to access the web, information explosion and loss, copyright, access limitations, trust on source authenticity and accuracy, high subscription costs, poor hardware, unskilled staff and users' inability to access the web (Bertot et al. 2009; Parent & Cruickshank 2009; Darries 2003; Mugwisi & Ocholla 2003). According to the report by Libraries Connect Communities 3 (2009:4), expanded wireless access, combined with increasingly

interactive, graphics-heavy multimedia internet services place a heavy burden on the public library's internet access.

### **3.7.2 Increased competition**

Weingand (1999:46) maintains that libraries do not often compete with other libraries, but they do compete with other entities such as Google and other search engines such as Amazon and Barnes and Noble where customers could buy rather than check out materials. Public libraries used to be the only provider of information sources before the introduction of the internet. Nowadays, services available via the internet took on many of the functions also performed by public libraries (Levien 2009:10). This includes information searching, online reference work, reading and so on. The existence of Google and other search engines provides users with instant information and remain convenient to use. Users are able to 'google' rather than look for reference assistance from the library (Weingand 1999:47). On the other hand, television and other interactive platforms are posing a serious challenge to public libraries.

This competition is further fuelled by the introduction of the range of digital media namely, e-books, videos and audio books. Furthermore, libraries are fighting back with their own e-book collections made available through aggregators, such as EBSCOhost, Credo, Bloomsbury, EBL (EBook Library), ebrary, NetLibrary and Overdrive. Some publishers, such as Elsevier, Springer Science+ Business Media, Wiley and Cambridge University Press also supply e-books directly to libraries (CILIP in Morris 2014).

It is imperative for public libraries amid this competition to position themselves for their own benefit and to ensure that they remain appealing to the young and adult population. In positioning themselves, Dowd, Evangeliste and Silberman (2010:126) suggest that public libraries should ask themselves the following questions:

- What is the traditional role of the library?
- How has this role changed since the advent of the internet?
- What do we do better than our competition?
- What do we do that is different from our competition?
- How do we want our target market to see us as compared to the competition?

Information services have become progressively more available online and it has become even more important for public libraries to differentiate their services in ways that are meaningful to their users.

### **3.7.3 Financial constraints**

Adequate levels of funding are crucial to the success of a public library in fulfilling its roles (Gill 2001:30). As forecasted by Levien (2011), governments at every level face the need to cut back services as a result of declining revenue and other budgetary pressures. Similarly, as public libraries are funded mostly by governments, they are also adversely affected by the economic downturn (Guarria & Wang 2010:201). As a result, many librarians and administrators have been challenged to find ways in which to maintain services or, in many cases, deal with increases in services, with less human and monetary resources.

The funding aspect remains a thorny issue to public libraries as it requires them to cut down on services that might position them well above their competitors (Mugwisi et al. 2016; Hart 2010; Dick 2007). Inadequate funding has a bearing on library stock, personnel and critical services as well as on ICT infrastructure. Omotosho and Okiki (2012) concur that the financial crisis has affected the structure and maintenance of the building, the size and contents of the collections, and the overall provision of services. Public libraries therefore have a duty to prioritise their operations amid financial constraints.



### **3.8 SUMMARY**

Provision of internet access through public libraries is a government competency (Berryman 2004; Larsen 2006; Baltrūnas et al. 2008; Bertot et al. 2011; National Library of South Africa 2012). In a country like South Africa, government telecommunications companies are tasked with the responsibility of providing internet access amid infrastructural and cost challenges associated with this service. In some instances, governments in various countries partner with industry or the private sector to provide internet services (La Rue 2012; Radijeng 2013). The requirements imposed by internet provision on public libraries threaten sustainability of access to these institutions.

However, it is the duty of every public library to provide access to its own resources and those kept elsewhere in the world. In this technological era, is to deploy ICTs in libraries to facilitate access to resources, especially internet provision. The major challenge public libraries battle with is to sustain the service given the economies involved. These include equipment, laying of infrastructure, bandwidth issues and cost implications. Although other means of wireless connectivity such as satellite can be considered, this too has its shortcomings (Ledwaba 2013).

This chapter described the historical development of public libraries from a global perspective to the South African environment. Apart from the historical development of public libraries, legislation governing these libraries has been discussed briefly. Internet access to these libraries also formed an integral part of this chapter. Progress made with regard to addressing inequalities in the South African public library service provision has also been discussed. It was revealed in this chapter that the total number of public libraries per province is not proportional to the population size per province. For example, Limpopo has a higher population size than the Northern Cape but has the lowest number of public libraries.

This chapter also dealt with the literature review by identifying and discussing studies related to internet connectivity at public libraries. The functions and the challenges faced by public libraries were discussed. These are in addition to the discussion on the legislative imperatives applicable to public libraries. The next chapter presents the research methodology of the study.

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 INTRODUCTION**

Valid knowledge produced, as identified through literature review, depends on the research methods used. Fielden (2008:7) and Ngulube (2005:127) concur with this sentiment and stress that methods employed by researchers are key to the quality of their research outputs.

To contextualise the methods used in the study, it is necessary to distinguish between the two types of research, namely basic and applied. Basic research is described as experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view (Gulbrandsen & Kyvik 2010:344). This type of research is undertaken to formulate hypotheses, theories or laws in order to expand knowledge in a particular field.

Applied research, on the other hand, is also original investigation undertaken to acquire new knowledge and it is directed primarily towards a specific practical aim or objective (Gulbrandsen & Kyvik 2010:344; Frascati Manual 2002:77). This research is undertaken either to determine possible uses, including commercial value of the findings of basic research or to determine new methods or ways of achieving specific and predetermined objectives. Notably, basic research lays down the foundation for the applied science that follows.

Both basic and applied research use methodological approaches to investigate the problem. Research methods are tools used to gather required data that assist the researcher in addressing the problem. This chapter presents the selected research methodology and the reasons for selecting such methods are advanced.

## **4.2 THEORETICAL PERSPECTIVES**

A theoretical perspective is a set of assumptions about reality that guide one's thinking. It can be understood as a "lens through which we look, focuses or distorts what we see" (Danaee 2012:58). The author elaborates that this lens becomes a transformative perspective that shapes the types of questions asked, informs how data are collected and analysed, and provides a framework for action or change.

A theoretical framework can also be thought of as a frame that serves to both include and exclude certain things from our view. Creswell (2014:98) concurs that it is used as a broad explanation for behaviour and attitudes, and further refers to these assumptions as worldviews. Ngulube (2015:5) further attests that "philosophical assumptions about the nature of knowledge, or the nature and existence of social reality and what constitutes that knowledge and ways of knowing make up a paradigmatic base of research in a subject field".

An understanding of the philosophical assumptions behind qualitative research begins with assessing where it fits in with the overall process of research, noting its importance as an element of research and considering how to actively write it into a study (Creswell 2014:2). Various assumptions have been used to draw the distinctions among perspectives and these include ontology, epistemology, axiology, rhetorical and methodology (Creswell 2014; 1997; Danaee 2012; Guba & Lincoln 1994). These taxonomies or assumptions are discussed briefly in the proceeding paragraphs.

### **4.2.1 Ontology**

Ontology refers to the nature of knowledge or the nature and existence of social reality (Ngulube 2015; Creswell 2014; Neuman 2011). Reality in this sense talks to the existence of what is real in the natural and social worlds. According to Ngulube (2015:6), the realist ontology is informed by the positivist paradigm while the constructivist is influenced by interpretivism. He purports that ontological

assumptions define what constitute knowledge and ways of knowing (epistemology) (Ngulube 2015:6).

Danaee (2012:61) maintains that ontology assumes that reality exists independently from the knowing subject and is deterministic in nature. According to Danaee (2012:61), this determinism is composed of three layers, namely:

- Reality is composed of discrete entities and events that can be aggregated hierarchically
- Entities and events are causally connected
- Universe is completely and totally predictable

Ontological assumptions in the conduct of inquiry therefore characterise the nature of reality.

#### **4.2.2 Epistemology**

Epistemological assumption is a theory of knowledge that deals with the nature of knowledge and its scope, which provides a set of criteria for evaluating knowledge claims and establishing whether such claims are warranted (Ngulube 2015; Yin 2009; Danaee 2012). It seeks answers to what the relationship between cognition and object of cognition is. Epistemology is basically concerned with the nature of knowledge and how knowledge is obtained. According to Liamputtong (2013:11), epistemological assumption begs 'the question of what is or should be regarded as acceptable knowledge in a discipline'.

With epistemological assumption, the researcher and the researched object are to be independent entities and the researcher can study the object without influencing it. Danaee (2012:62) attests that this separation makes objective knowledge possible. The underlying principle is that the truthfulness of any knowledge can be determined by empirically testing its correspondence to reality.

### **4.2.3 Axiology**

Axiological assumption refers to a theory of the roles that values play in conducting research (Danaee 2012:59). With this assumption, researchers attempt to separate facts from the values of the known object. In the process of conducting research, the researcher's values are kept out of the study. Creswell (2014:5) maintains that with axiological assumption, the researchers admit the value-laden nature of the study and actively report their values and biases as well as the value-laden nature of information gathered from the field. Axiology provides for the value freedom where the researcher has a choice of what to study and how to study it. The objective criteria rather than beliefs and interests should determine the object of study (Danaee 2012:63).

### **4.2.4 Rhetorical**

Rhetorical assumption relates to a theory of language used in conducting a research (research language) (Danaee 2012:63). The author further asserts that in language of the interpretive paradigm, terms such as ideographic view, participants, respondents, reflexivity, reciprocity, ground theory analysis, content analysis and triangulation are common (Danaee 2012:66). That is, the language of the study may be first person and personal.

### **4.2.5 Methodology**

Methodology refers to a process through which knowledge is to be generated. According to Ngulube (2015:6), "methodology is central to the research process, because it is the lens through which a researcher looks when making decisions on acquiring knowledge about social phenomenon and getting answers to the research questions". Methodology in qualitative research is characterised as inductive, emerging and shaped by the researcher's experience in collecting and analysing the data (Creswell 2014:7).

Creswell (2014:7) argues that the qualitative researcher follows the inductive logic in his/her methodological approach. He further purports that through this logic, the research questions sometimes change in the middle of the study to reflect better the types of questions needed to understand the research problem. The data collection strategy planned before the study therefore needs to be modified to accompany the new questions.

Based on the above characteristics, any paradigm has ontological, epistemological, methodological, rhetorical and axiological assumptions that together frame the nature of the research and the role of the research in the scientific study.

### **4.3 RESEARCH PARADIGM**

Mackenzie and Knipe (2006:2) purport that the theoretical framework, as distinct from a theory, is sometimes referred to as the paradigm and influences the way in which knowledge is studied and interpreted. Collis and Hussey (2009:55) affirm that the research paradigm as a philosophical approach, guides a researcher on how to conduct a scientific research based on the assumptions and beliefs that people ascribe to the world and the nature of knowledge. It is the choice of paradigm that sets down the intent, motivation and expectations for the research. Mackenzie and Knipe (2006:2) further maintain that without nominating a paradigm as the first step, there is no basis for subsequent choices regarding methodology, methods, literature or research design.

A number of theoretical paradigms are discussed in the literature (Dash 1993; Leedy & Ormrod 2005; Mackenzie & Knipe 2006; Creswell 2009; Van Esch & Van Esch 2013; Ngulube 2015) and these include realism (positivism), pluralism (pragmatism) and constructivism (interpretivism).

This study is based on the post positivism paradigm, which according to Taylor & Medina (2013:2) aims to produce objective and generalisable knowledge about social patterns, seeking to affirm the presence of universal properties/laws in relationships amongst pre-defined variables. The post positivist paradigm was adopted although supplementary data was obtained through interviews. Post-positivism is regarded as a less strict form of positivism that follows the same principles as positivism but allows more interaction between the researcher and his/her research participants (Taylor & Medina 2013:3). Creswell (2009) affirms that post positivism uses additional methods such as survey research and qualitative methods such as interviewing and participant-observation.

While positivism maintains the view that only factual knowledge gained through observation (the senses), including measurement, is trustworthy (Dudovskiy 2018), post positivism holds that objectivity remains a regulatory ideal, and research findings are always subject to falsification (Guba & Lincoln 1994:110). Chilisa & Kawulich (2011:7) argue that objectivity can be achieved by using multiple measures and observations and triangulating the data to gain a clearer understanding of what is happening in reality. They further maintain that most of the research approaches and practices in social science these days fit better into the post-positivist category.

#### **4.4 RESEARCH APPROACH**

Decisions on methodology need to be made according to “the purpose of the inquiry, the question being investigated and the resources available” (Patton 1990:38-9 in Cantrell 1993). What is of importance here is not only the choice of methods used, but also how they are used. There are three common methodological approaches to research used in social research, namely qualitative, quantitative and mixed methods (Ngulube 2015:5; Creswell 2014:32; Neuman 2011; Creswell 2006; Leedy 1997).



The following is a discussion of the various approaches to research. Each approach is discussed based on the purpose, nature, methods and how findings are communicated.

#### **4.4.1 Qualitative research**

Qualitative research is an umbrella phrase that describes many research methodologies such as ethnography, grounded theory, phenomenology and interpretive description, which draw on data collection techniques such as interviews and observations (Leedy 1997:156). With this approach, "...greater importance is placed on the gathering of first-hand data, that is, studying behaviour within and in terms of the situation in which it occurs" (Southwood 2000:34). According to Lemmer (in Southwood 2000:35), statistical analyses have been supplemented with detailed descriptions, life histories, diaries, interviews, sketches, photographs and field notes from participant observations. Therefore, findings are communicated in words and narratives. Qualitative research methods have been applied across many disciplines, including in library and information science. This was attested to by Taylor (1967), Lawson (1971), Busha and Harter (1980) and Paris (1988).

There are various forms of qualitative research methods discussed in literature. Leedy (1997:156) and Morse & Field (1996:18) identify inter alia, case studies, phenomenology, ethnography, grounded theory and ethnology. The following is a brief discussion of forms of qualitative method.

#### **4.4.2 Quantitative research**

Creswell (in Leedy 1997:104) defines quantitative research as "...an inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers and analysed with statistical procedures in order to determine whether the predictive generalisations of the theory hold true". Ngoepe

(2012:93) maintains that quantitative research places the emphasis on measurement when collecting and analysing data and it generally follows a natural science model of the research process measurement to establish objective knowledge.

Quantitative methods are characterised by the use of numbers and statistics such as experiments, correlational studies using surveys and standardised observational protocols, simulations and supportive materials for case study such as test scores. As a result, the findings are communicated through numbers and statistical data. The general sequence of quantitative research includes:

- Observe events/present questionnaire/ask questions with fixed answers
- Tabulate
- Summarise data
- Analyse
- Draw conclusions

This type of research process involves working with known variables under established guidelines. The aim of this approach is to examine the experimental variables and control the external variables that arise out of the environment.

#### **4.4.3 Mixed methods research approach**

Mixed methods research (MMR) combines both qualitative and quantitative approaches (Creswell 2006). Mixed methods research combines the two approaches (qualitative and quantitative) to enable the researcher to obtain in-depth results which might otherwise not be accomplished by one approach. Despite the use of a combined approach (mixed method), one approach tends to dominate the other. Neuman (2000:123) attests that while studies may have multiple purposes, one purpose is generally dominant. Mixed methods research uses both approaches to answer research questions, generating qualitative and

quantitative data that are brought together in order to answer the research question.

Harrison and Reilly (2011:8) regard mixed methods research as a comprehensive technique for research in social sciences since it integrates thematic and statistical data. These sentiments are further echoed by Neuman (2000:122) when he asserts that the best option to address a research query is to deploy a range of approaches in order to allow flexibility in understanding problems and offering multiple insights into their solutions. This is to say that each approach complements the other and allows the researcher ample room to resolve the research problem. As attested to by Ngoepe (2012), using multiple methods that do not share the same inherent weaknesses enhances the researcher's chances of solving the problem.

Ngulube, Ndwandwe and Mokwatlo (2009:107) identify three distinctive types of mixed research strategies, namely:

- Sequential strategies whereby qualitative data is collected and analysed before the quantitative data collection and analysis phase (or vice versa)
- Concurrent methods, in which data is collected using both qualitative and quantitative procedures simultaneously (for example, administering a questionnaire which has both closed-ended and open-ended questions)
- Transformational techniques, which use a theoretical perspective to guide and drive the entire study design

The use of a particular type of a mixed research will depend on the type of inquiry under investigation. In some instances, a combined approach can be used to achieve comprehensive results.

This section concludes the discussion of different types of research methods, namely quantitative, qualitative and mixed methods research. The discussion

helps to explain the methods chosen by the researcher. It has been indicated in the preceding paragraphs that the difference between these three approaches to research can be demonstrated by analysing the purpose, nature, methods and how the findings of each approach are communicated.

#### **4.4.4 Choice of methods**

Creswell (2006:21) argues that the criterion for selecting an approach takes into account many factors that may include “the research problem, the personal experience of the researcher, and the audiences”. The problem investigated in this project is how the provision of internet access to public libraries in South Africa can be sustained. Based on the discussion of the different research methods, both qualitative and quantitative approaches were adopted. To address the objectives more efficiently, the two approaches were used to augment each other. Mackenzie and Knipe (2006:2) posit that quantitative methods may also be used to support qualitative data. In support of this notion, Yin (2014) attests that by including both quantitative and qualitative data helps to explain both the process and the outcome of a phenomenon through complete observation, reconstruction and analysis of the subjects under investigation.

Both qualitative and quantitative methods were chosen by the researcher to maximise the theoretical implications of research findings. It is worth emphasizing that the type of data required determines the type of research method to be used.

#### **4.5 RESEARCH DESIGN**

A research design is regarded as a plan of action that links the methodology, philosophical framework and fundamental assumptions of the research to the methods used for data collection and subsequent analysis (Creswell 2014; Creswell & Clark 2007). In other words, the research design is a framework of the research study. Trumbull (2000:80) confirms that the research design

encompasses the plans and strategies that have been developed to explore and to discover answers to the research problem. Research design involves procedures the researcher follows in collecting and analysing data. As Neuman (2011) puts it “research procedures typically include the population and how it was obtained, sampling procedures, instrumentation used, procedures employed in gathering and processing data, and statistical treatment of data”. Babbie and Mouton (2001:74) consider research design as a plan or blueprint of how one intends to conduct the research. The following sections discuss case study design, population, sampling and data collection tools for the study.

#### **4.5.1 Survey research design**

This study utilised survey research procedure to investigate how the provision of Internet access to public libraries in South Africa can be sustained. A survey design involves collecting primary data from all or part of a population to find information about how often certain variables occur, how they are distributed and how they interrelate within the population (Ngulube 2005). It involves the administration of questionnaires or interviews to relatively large groups of people who are spread over a large geographic area (Babbie & Mouton 2001; Singleton & Straits 2010:9). Ngoepe (2012:99) argues that “regardless of whether the survey makes use of interviews only, questionnaires only, or a combination of the two, the procedures tend to be standardised for all respondents in order to enhance the reliability of the data”.

Surveys can either be cross-sectional or longitudinal (Ngulube 2005). In his distinction, cross-sectional design collects data from a sample selected from a given population at a specific point in time whereas in a longitudinal design, data is collected at different points in time. A cross-sectional approach whereby data was collected at one point in time in the form of questionnaire, was used in this study. Most surveys utilise individuals as the units of analysis. This study however uses public or community libraries as units of analysis.

### 4.5.2 Research population

A research population is defined by Babbie (2004:112) as a specific group (usually of people) about whom the researcher wants to draw inferences. It refers to a set of objects, whether animate or inanimate, that are the focus of research and about which the researcher wants to determine some characteristics (Ngoepe 2012:100).

The research population for this study was the head librarians of public libraries and nine heads of directorates for library services in the nine provincial departments of arts, sport, culture and recreation in South Africa. Some departments are named differently in certain provinces as evident in table 4.1.

<b>Province</b>	<b>Department name</b>
Eastern Cape	Department of Sport, Recreation, Arts and Culture
Free State	Department of Sport, Arts, Culture and Recreation
Gauteng	Department of Sport, Arts, Culture and Recreation
KwaZulu-Natal	Department of Arts and Culture
Limpopo	Department of Sport, Arts and Culture
Mpumalanga	Department of Culture, Sport and Recreation
Northern Cape	Department of Sport, Arts and Culture
North West	Department of Culture, Arts and Traditional Affairs
Western Cape	Department of Cultural Affairs and Sport

Table 4.1: Provincial departments naming convention

### 4.5.3 Sampling

Sampling is the process of selecting units from a population to be studied with the purpose of generalising the results back to the population from which they were chosen (Babbie 2007; Teddlie & Yu 2007; Payne & Payne 2004). In other words, sampling involves selecting a particular group or sample to represent the

population under study. Several authors (Mojapelo 2014; Babbie 2007; Teddlie & Yu 2007; Payne & Payne 2004) identified two common and basic sampling techniques, namely probability and non-probability sampling. In probability sampling, every member of the population has an equal chance of selection, which is not the case with non-probability sampling (Doherty 1994:23).

Probability sampling techniques were used in this study to afford every member of the population an opportunity of being drawn into the sample. In this case, the researcher does not have any control over who is selected into the sample (Teddlie & Yu 2007; Doherty 1994).

The population of 1 612 public libraries was randomly sampled where data was collected and findings inferred to the target population. No sampling was done on the nine heads of provincial public libraries, as the nature of this population did not warrant further dissection due to its small size.

#### **4.5.3.1 Sample size**

Sample size refers to the number of individuals or objects included in a study from whom the required information is obtained (Leedy & Ormrod 2010; Kumar 2005; Payne & Payne 2005). In order to infer findings to the population without bias, as argued by Mojapelo (2014:128), a sample of a certain size should be relative to the size of the target population and it should reflect the same characteristics as the target population.

For this study, a sample was drawn from a target population of all 1 612 public libraries in South Africa. A “look-up table for sample sizes from different sized universes” (Payne & Payne 2004:204) was used to obtain a sample size relative to the size of the population under study. According to this table, if the target population comprises 2 000 units of analysis, the sample should be 322 (Payne &

Payne 2004:204). The sample of 322 public libraries represented the targeted population of 1612 public libraries in South Africa.

The sample size of 322 public libraries, which represented 20% of the target population, was justifiable and representative and could adequately address the objectives of the study.

#### **4.5.4 Sampling methods used in the study**

The study employed specific sampling methods to obtain an inclusive and representative sample from the target population, namely stratified, probability proportional to size and systematic techniques. The study also adopted purposive sampling to include heads of provincial library services.

##### **4.5.4.1 Stratified sampling**

In stratified sampling, the population is divided into sub-populations or strata. South African provinces therefore constitute the first stratum. The sample size of 322 was proportionally subdivided per province as indicated in Table 4.2. The Directory of Public Libraries in South Africa published by the National Library of South Africa was used, as it contained the contact details, physical addresses and postal addresses of public libraries in South Africa.

<b>Province</b>	<b>No of public libraries</b>	<b>Sample size per province</b>
Eastern Cape	144	29
Free State	173	35
Gauteng	234	47
KwaZulu-Natal	174	34



Limpopo	74	15
Mpumalanga	111	22
Northern Cape	253	50
North West	102	21
Western Cape	347	69
<b>TOTAL</b>	<b>1612</b>	<b>322</b>

Table 4.2: Breakdown of sample size per province

The sample size per province was derived as follows:

The number of public libraries in A (representing a province) multiplied by 20%, which is the percentage of the target population. The formula was depicted as:

$$n = A \times \frac{20}{100}$$

#### 4.5.4.2 Probability proportional to size

This approach suggests that communities with larger populations would have a proportionately greater chance of containing a selected cluster than smaller communities (Leedy & Ormrod 2010; Payne & Payne 2004). For this study, sampled public libraries were chosen proportionately to the size of the target population in a particular province as demonstrated in Table 4.3. To obtain sampling frames, these libraries were further divided into strata to reflect the rural and urban categories. From 1 024 urban public libraries, which constituted 64% of total public libraries, 205 were chosen randomly. On the other hand, out of 588 (36%) rural public libraries, 117 were also randomly chosen.

Elements in each stratum were subdivided to ensure that the sample remained unbiased and representative. There are, however, three provinces (Free State, Gauteng and Western Cape) that do not have a rural public libraries component.

<b>Stratified proportional sampling</b>		
<b>Stratum</b>	<b>Elements in population</b>	<b>Proportional sampling</b>
Eastern Cape	Total of rural libraries 85 (20%)	17
	Total of urban libraries 59 (20%)	12
Free State	Total of rural libraries 0 (20%)	0
	Total of urban libraries 173 (20%)	35
Gauteng	Total of rural libraries 0 (20%)	0
	Total of urban libraries 234 (20%)	47
KwaZulu-Natal	Total of rural libraries 117 (20%)	23
	Total of urban libraries 57 (20%)	11
Limpopo	Total of rural libraries 53 (20%)	11
	Total of urban libraries 21 (%)	4
Mpumalanga	Total of rural libraries 42 (20%)	8
	Total of urban libraries 69 (20%)	14

Northern Cape	Total of rural libraries 207 (20%)	41
	Total of urban libraries 46 (20%)	9
North West	Total of rural libraries 84 (20%)	17
	Total of urban libraries 18 (20%)	4
Western Cape	Total of rural libraries 0 (20%)	0
	Total of urban libraries 347 (20%)	69
<b>Total</b>		<b>1612 (20%)</b>
		<b>322</b>

#### 4.3: Stratified sampling proportional to size

##### 4.5.4.3 Systematic sampling method

Leedy and Ormrod (2010:205) define systematic sampling as the random sampling technique where the researcher selects every  $n$ th subject in the sampling frame. This study used the systematic sampling method within rural and urban settings to ensure unbiased selection of public libraries in each stratum. In the rural category within each province, public library number 1 was randomly selected as a starting point. A standard interval to distribute libraries was derived from using the formula:  $85/17$  (where 85 is the total number of rural public libraries and 17 is the sample size within a particular province), thus yielding a standard interval of 5. This calculation was based on the first province, which is the Eastern Cape. The standard interval of 5 resulted in the following rural public libraries to be included

in the sample: 1, 6, 11, 16, 21...until 85. It has been established that the standard interval was the same across all provinces as displayed in Table 4.4.

In the urban category (Eastern Cape) consisting of 59 public libraries, library number 2 was randomly selected as a starting point. The formula used to obtain a standard interval was  $59/12=5$ . The formula indicated that the total number of urban public libraries (59) in Eastern Cape was divided by the number of urban public libraries required to form the sample size in this stratum (12) to obtain a standard interval (5). This meant that 2, 7, 12, 17, 22...until 59 urban public libraries were selected to be included in the sample. Table 4.4 depicted standard interval across provinces.

<b>Stratified proportional sampling with standard interval</b>			
<b>Stratum</b>	<b>Elements in population</b>	<b>Proportional sampling</b>	<b>Standard interval</b>
Eastern Cape	Total of rural libraries 85 (20%)	17	5
	Total of urban libraries 59 (20%)	12	5
Free State	Total of rural libraries 0 (20%)	0	0
	Total of urban libraries 173 (20%)	35	5

Gauteng	Total of rural libraries 0 (20%)	0	0
	Total of urban libraries 234 (20%)	47	5
KwaZulu-Natal	Total of rural libraries 117 (20%)	23	5
	Total of urban libraries 57 (20%)	11	5
Limpopo	Total of rural libraries 53 (20%)	11	5
	Total of urban libraries 21 (%)	4	5
Mpumalanga	Total of rural libraries 42 (20%)	8	5
	Total of urban libraries 69 (20%)	14	5
Northern Cape	Total of rural libraries 207 (20%)	41	5
	Total of urban libraries 46 (20%)	9	5

North West	Total of rural libraries 84 (20%)	17	5
	Total of urban libraries 18 (20%)	4	5
Western Cape	Total of rural libraries 0 (20%)	0	0
	Total of urban libraries 347 (20%)	69	5

Table 4.4: Standard interval applicable to all provinces

A total of 322 rural and urban public libraries formed the sample size. Accordingly, this sample was inclusive and representative across different strata of the population.

#### 4.5.4.4 Purposive sampling method

Also known as judgmental or selective sampling, a purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study (Saunders, Lewis & Thornhill 2012). It implies that the researcher relies on his or her own judgment when choosing members of population to participate in the study. For the purpose of this study, the purposive sampling technique was used to choose all nine (9) provincial heads of Library Services in South Africa. There was no need to dissect this population because the number was too small to warrant further sampling. The provincial heads were included in the study to provide the researcher with data pertaining to the provision of sustainable internet access to public libraries in their provinces.

#### **4.5.5 Data collection instruments**

There are various sources of data applicable in research. These include primary data and secondary data. Primary data is new data obtained from direct observation of the phenomenon under investigation or is personally collected (Welman & Kruger 2001). The means of collecting primary data involve interviews, personal or telephonic, self-administered questionnaires and direct observation methods. Secondary data, on the other hand, is always someone else's interpretation of primary data (Ngoepe 2012:105). Data is collected through published records or documents and unpublished dissertations.

This study used the primary data approach. Two techniques were employed for primary data collection, namely interviews and questionnaire. Interviews were the main method of data collection, complemented by questionnaires. These instruments counter each other's weaknesses and as a result provide in-depth and meaningful information to the research project. The ensuing section is a detailed discussion of the data collection techniques used in the study.

##### **4.5.5.1 Interviews**

Since constructivist researchers tend to rely on participants' viewpoints about the situations under investigation (Creswell 2003:8), the vast majority of inductive research remains interview based and interpretivist in nature. Accordingly, the use of interviews as a data collection method in inductive research is justified by its affinity for daily-life conversations and the centrality of interactions, exchanges and negotiation of meaning between two parties which corresponds to constructivist approaches to research (Mojtahed, Baptista, Tiago & Peng 2014:87).

In this study, scheduled and structured telephonic interviews comprising a set of questions with fixed wording and sequence of presentation were conducted with nine heads of provincial directorates of library services (see appendix B). The list

with contact details was obtained from the directory of public libraries in South Africa. The interview schedule was pre-tested with managers of the metropolitan libraries in Buffalo City, City of Johannesburg, City of Tshwane, Ekurhuleni, City of Cape Town, eThekweni and Nelson Mandela Bay.

#### **4.5.5.2 Questionnaire**

This study used self-administered questionnaire (see Appendix C) as the main method of gathering data. It was chosen for this study because of its unique technique as a data collection instrument. A questionnaire can be regarded as a written form of questioning. It is the most widely used technique to gain information relevant to the researcher's subject of enquiry (Babbie 1990:15). Creswell (2014) notes that a questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Creswell (2014) further maintains that a questionnaire permits wider geographical contacts and facilitates the collection of large amounts of data and information in a relatively short period of time. Questionnaire is the most common instrument used in survey research designs.

Questionnaire can be self-administered, online, postal or mail based, interviewer administered, telephonic or interview schedules (Creswell 2006). Commonly used questionnaires include self-administered and interviewer-administered questionnaires (Ngoepe 2012:107). Creswell further affirms that self-administered questionnaires include online questionnaires, postal questionnaires and delivery and collection questionnaires.

A questionnaire has two types of approaches, namely open ended and closed ended (Thomas 2009). An open-ended question gives the respondent the choice of what to say in response. A closed-ended question gives the respondent a limited set of responses to choose from (Thomas 2009). Closed-ended questions are also known as multiple-choice questions.



The questionnaire conformed to the service quality model of Dabholkar et al. (1996), which is the basis for this study. The questions on service quality were based on an existing research instrument, the Retail Service Quality Scale (RSQS) developed by Dabholkar et al. (1996). The purpose of this research instrument is to measure respondents' perceptions of the quality of service. The RSQS has five basic dimensions which are described below, six sub-dimensions and 28 items (Dabholkar et al. 1996:6).

- The physical dimension consists of two sub-dimensions: appearance and convenience. The physical aspects dimension in the questionnaire measured perceptions on the ISP's location or offices.
- Reliability comprised the sub-dimensions of promises and doing it right (Dabholkar et al. 1996:6). This dimension in the questionnaire measured perceptions on ISP promise and the ability to do things right.
- Personal interaction is made up of the two sub-dimensions of inspiring confidence and being courteous/helpful (Dabholkar et al. 1996:7). In the questionnaire, perceptions of courteousness/helpfulness of the ISP have been measured.
- Problem-solving focused on how employees of the ISP handle potential problems (Dabholkar et al. 1996:7). The problem-solving dimension was also represented in the questionnaire.
- Policy focused on items of service quality that were directly influenced by policy (Dabholkar et al. 1996:7). The policy dimension, which included an internet fair use policy as well as other policies regulating internet access, were represented in the questionnaire.

Both open-ended ("other, specify", "if not, why", "if yes, why") and closed-ended questions ("yes or no") were used to gain many responses from the respondents. Babbie and Mouton (2001:237) maintain that "the use of this alternative represents an excellent compromise between closed and open-ended responses".

## **4.6 DATA COLLECTION PROCEDURE**

Most of the questionnaires were distributed to the respondents through their e-mail addresses while some were handed directly to them. Interviews were conducted telephonically with Heads of Provincial Directorates of Library Services. Permission to record the interview was obtained from each participant. No research assistants were used in the study.

## **4.7 RESEARCH TRUSTWORTHINESS**

Both qualitative and quantitative research approaches have criteria that can be used to evaluate the rigour (authenticity/credibility/strength) of the research (Ngulube 2015; Yin 2014; Creswell 2014; Liamputtong 2013). However, qualitative research is descriptive and unique to a specific historical, social and cultural context and cannot be repeated in order to establish reliability (Liamputtong 2013). Within the qualitative approach, the term 'trustworthiness', which refers to the quality of qualitative enquiry is used (Liamputtong 2013:9). It means that the research results should be trusted enough to be acted upon with confidence.

In this case, trustworthiness is about establishing credibility, transferability, dependability and confirmability of qualitative research findings as discussed in the following paragraphs.

### **4.7.1 Credibility**

Credibility refers to how confident the qualitative researcher is in the truth of the research study's findings (Yin 2014). The credibility criteria, according to Creswell (2014), involve establishing whether the results of qualitative research are credible or believable from the perspective of the participant in the research. The author posits that since the purpose of qualitative research is to describe or understand the phenomena of interest from the participant's viewpoint, it is for this reason that

the participants are the only ones who can legitimately judge the credibility of the results.

#### **4.7.2 Transferability**

Transferability refers to how the qualitative researcher demonstrates that the research findings are applicable to other contexts (Creswell 2014). In other words, it relates to the degree to which the results of qualitative research can be generalised or transferred to other contexts or settings. “Other contexts” can mean similar situations, similar populations and similar phenomena (Creswell 2014).

#### **4.7.3 Dependability**

According to Creswell (2014), dependability is the extent to which the study could be repeated by other researchers with the findings remaining consistent. In other words, dependability is concerned with whether researchers would obtain the same results if the same thing could be observed twice. The traditional quantitative view of reliability is based on the assumption of replicability or repeatability (Creswell 2014).

#### **4.7.4 Confirmability**

Confirmability refers to the degree to which the results could be confirmed or corroborated by others (Liamputtong 2013). It is the degree of neutrality in the research findings. This means that the findings are based on participants’ responses and not on any potential bias or personal motivations of the researcher (Creswell 2014). One way of confirming the research findings is for the researcher to document the procedures for checking and rechecking the data throughout the study.

## **4.8 ETHICAL CONSIDERATION**

Research ethics involves the application of ethical principles to scientific research (Powell & Connaway 2004:68). Cooper and Schindler (2006:116) purport that all interested parties in a research should exhibit ethical behaviour. During the data collection period of this study, several ethical issues were addressed, namely briefing participants, confidentiality and the right to privacy.

Participants were fully briefed about the purpose of the study prior to completing the questionnaire (see appendix A). With regard to participant consent, Zikmund, Babin, Carr and Griffin (2010:90) attest that informed consent occurs when a participant in a research study understands what the researcher wants them to do and consents to the study. This is confirmed by Powell and Connaway (2004:187) when they state that one of the most important ethical rules governing research on humans is that participants must give their informed consent before taking part in the study. In this study, informed consent from participants was secured by means of full disclosure of the procedures of the study before requesting permission to proceed with the study (see appendix D), as confirmed by Cooper and Schindler (2006:119).

According to Zikmund et al. (2010:91), the researcher has to treat the participants' information with confidentiality and not share it with anyone. In this study, the right to privacy of the participants was protected by guaranteeing anonymity and confidentiality.

The research findings obtained from this study were used solely for the researcher's academic purposes. Care was taken to report the findings in a way that did not serve the researcher's own or someone else's interest to avoid biasness. Also, no attempt was made by the researcher to deliberately misrepresent the findings. Lastly, this study complied with all ethical research

requirements of University of South Africa (2007), which state that the rights and interests of human participants should be protected in research.

#### **4.9 EVALUATION OF RESEARCH METHODS**

Ngulube (2005:139) attests that “research methods need to be evaluated in order to explain what information was required, how it was collected and how it was analysed”. This is based on the analysis that no research method is without errors. Therefore, according to Neuman (2011), it is necessary to evaluate the procedures involved in collecting and analysing data to describe weaknesses in the study. According to Creswell (2014), the value of evaluating the research methodology is not only to inform other researchers about the challenges encountered during the process of the study, but also to contribute towards an improved social research practice.

The major challenge with the interviews was that some of the interviewees were always not available. To mitigate this, a list of questions was sent to them to complete. The study used an e-mail facility to distribute the questionnaire to participants. One of the major problems experienced when distributing the questionnaire was the fact that some recipients' e-mails returned undelivered due to incorrect email addresses. This was as a result of outdated contact entries in the Directory of Public Libraries in South Africa, due to resignations. Direct enquiries with the provinces concerned helped to resolve this impasse. Furthermore, sending the questionnaire through e-mail resulted in delays in receiving responses back, as some respondents indicated that they were swamped with their duties and forgot about the questionnaire.

Generally, challenges encountered in the data collection process did not have a negative impact on the findings.

#### **4.10 SUMMARY**

This chapter discussed the research methodology and identified approaches relevant to this research project. The methodological approach was informed by the research problem articulated in the study. Reasons for the choice of research methods, as well as the use of questionnaires and interviews as data collection tools, were advanced. Reliability and validity of these data collection tools were also discussed. The next chapter (chapter 5) focuses on the analysis, interpretation and discussion of data.

## **CHAPTER 5**

### **DATA ANALYSIS AND PRESENTATION**

#### **5.1 INTRODUCTION**

The previous chapter dealt with the research methodology that was used for this study. In this chapter, data that was collected during the empirical study in the form of interviews and questionnaires is presented and analysed. Graphs and tables are used to present the findings of the study. Neuman (2011: 467) describes data analysis as a search for patterns in data, recurrent behaviour, objects, phases or ideas. He further contemplates that data analysis involves examining, sorting, categorising, evaluating, comparing synthesizing and contemplating the coded data, as well as reviewing the raw and recorded data. Creswell (2009:152) affirms that data analysis is a key aspect of any research and it helps in drawing conclusions and generalisations of findings to a problem statement.

#### **SECTION A: PROFILING THE RESPONDENTS**

#### **5.2 RESPONSE RATE AND PARTICIPANTS' PROFILE**

Respondents in this study were head librarians of public libraries and directors of public libraries in the nine provinces of South Africa. The respondents were sampled from both rural and urban public libraries. In collecting the data, 322 questionnaires were distributed to sampled head librarians of public libraries across South Africa. Interviews were conducted with directors of public libraries in South Africa. Table 5.1 outlines the response rate:

<b>Targets</b>	<b>Targeted number</b>	<b>Total number of respondents</b>	<b>Response rate in %</b>
Rural public libraries	117	82	70
Urban public libraries	205	121	59
Directors of provincial public libraries	9	6	67
<b>Total</b>	<b>331</b>	<b>209</b>	<b>63</b>

Table 5.1 Response rate

The target number of 322 libraries was sampled from a total figure of 1 612 and consisted of rural and urban public libraries (Payne & Payne 2004:204). In addition, all the nine directors of public libraries in the nine provinces of South Africa were also targeted. This brought the total target group to 331. Of the nine directors of public libraries in South Africa, six participated in the interviews. These represented the following provinces: Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West and Western Cape. In cases where it was not possible to interview the directors, they deferred the interviews to their deputies. Two deputies, from Gauteng and North West, were interviewed on behalf of their directors. Questions on ICT penetration and internet access from the interview were referred to ICT managers to respond to. The responses were sent to the researcher in writing.

Of the 322 public libraries targeted, 203 (63%) responded. Eighty-two participants from the targeted 117 rural public libraries responded to the questionnaire. This constituted a 70% response rate from the rural public libraries. On the other hand, 121 (59%) participants from urban public libraries responded.

According to Babbie and Mouton (2001:261), a response rate of 50% is adequate for analysis and reporting, while 60% is good and 70% is very good. The response



rate achieved for this study was 63%, and was therefore considered good; hence, the researcher proceeded with the analysis.

### **5.3 BACKGROUND INFORMATION**

The respondents were asked to give the province where they were located as well as the name of the library they worked at. This was done to ensure that the province and the library the respondents represented were known without divulging their responses for confidentiality purposes.

The researcher asked the respondents to indicate if their libraries were in a rural or urban setting. Responses are reflected in table 5.1.

Sixty percent 60% (121) responses came from urban libraries and 40% (82) response rate came from rural libraries. This is a reflection of the sample size where urban public libraries constituted the majority of libraries at 64%, as discussed in section 4.5.4.2.

This question on the type of a library they come from, was directed to Heads of public libraries (203). With regard to the type of library, the majority of respondents at 98% (199) had physical buildings for libraries, while 2% (4) used modular or container structures. It could be deduced from this finding that most public libraries in South Africa have physical structures. The high number can also be attributed to the fact that some libraries are housed in community buildings, which had not initially been designed as library buildings (KPMG report 2007; LIS Transformation Charter 2014). There were only a few modular or container libraries and these were attempts to deliver library and information services to the communities that did not have libraries at all. According to the responses, some of the modular or container libraries were extensions of the main libraries with physical buildings.

One respondent further indicated that “...Our modular libraries are used as extensions of library services to the remote rural communities”.

Respondents were requested to indicate the number of staff in their libraries. This question was directed to Heads of public libraries. The responses are captured in table 5.2.

<b>Respondents</b>	<b>Number of staff</b>
Rural public libraries	304
Urban public libraries	638
<b>Total</b>	<b>942</b>

Table 5.2: Number of staff in the public libraries

The findings of the study indicated a total number of 942 personnel employed in the public libraries. Furthermore, at 68% (638), urban public libraries employed more personnel than their rural counterparts. These findings attested to the common staffing argument across different sectors where rural areas are usually shunned by qualified personnel (Shuva 2005; Bertot, McClure & Jaeger 2008).

The study also established the number of registered users per library. It was found that there was an average of 1 710 registered users per library with a maximum of 4 526 in one library.

## **SECTION B: FINDINGS AND DISCUSSION**

### **5.4 DATA PRESENTATION AND DISCUSSION**

To present data in an elaborative manner, written descriptions, tables and figures were used. The results are presented in relation to the formulated research objectives tabled in 5.1. There are linkages with both interview and questionnaire questions with most questions similar in both sides. In some instances, for example, questions on ICT penetration, interviewed participants (Directors) relied

on information from questionnaire participants (Heads of public libraries). It is for this reason that the researcher presented both responses from the interview and the questionnaire on a question basis.

#### **5.4.1 Extent of public library development in South Africa**

This section sought to ascertain the development of public libraries in South Africa.

##### **5.4.1.1 Development of public libraries in South Africa**

Both categories of respondents, (directors and head librarians of public libraries) were requested to describe the development of public libraries in their provinces before and after 1994. The purpose was to determine the extent of development of public libraries in South Africa. The study found that all the 209 respondents indicated that libraries were not well developed pre-1994, except in the former white communities. Respondents further indicated the following:

“Public libraries have become more accessible to black communities than they were before 1994. Before 1994 they were mainly used by white people and highly qualified black people”.

“There were no libraries in areas such as Thembalethu and Knysna before 1994. They were built after 1994.”

“More libraries are built in communities that need them than was the case before 1994.”

“There are many developments, especially since the introduction of the conditional grant. The grant covers staffing, infrastructure, ICT, books and marketing.”

“Libraries were limited before 1994. Now they are increasing; in our area, a variance of 20 and 40 km distance of libraries was created. More libraries are still in the pipeline.”

The majority of public libraries were still concentrated in urban communities as reflected in table 5.1.

#### **5.4.1.2 Factors affecting development of public libraries in South Africa**

The question was posed to the directors and the heads of public libraries (209). Responding to the factors that contributed to the development or a lack of development of public libraries in their province, 82% (171) cited that improved funding through conditional grant for public libraries contributed to the development, 10% (21) mentioned leadership and sustainability in the LIS sector and 8% (17) indicated various factors such as the constitution, political will and partnerships.

#### **5.4.2 Legislative framework**

This section sought to examine legislative framework governing public libraries in South Africa.

##### **5.4.2.1 Awareness of legislative framework governing public libraries in South Africa**

Both the directors and the head librarians of public libraries (209) were asked if they were aware of any legislative framework governing public libraries in South Africa. The purpose was to determine the level of awareness of legislation applicable to public libraries. The findings are captured in figure 5.1.

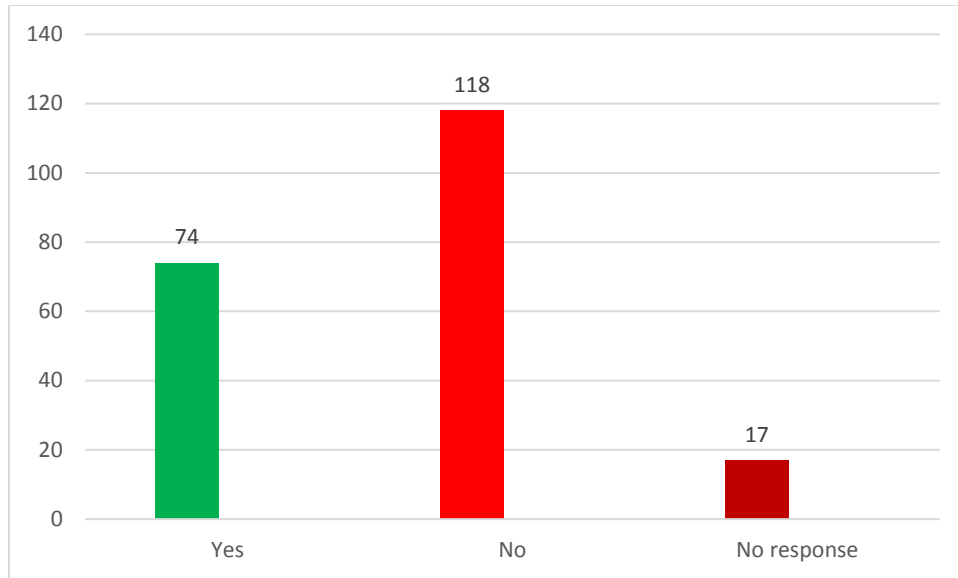
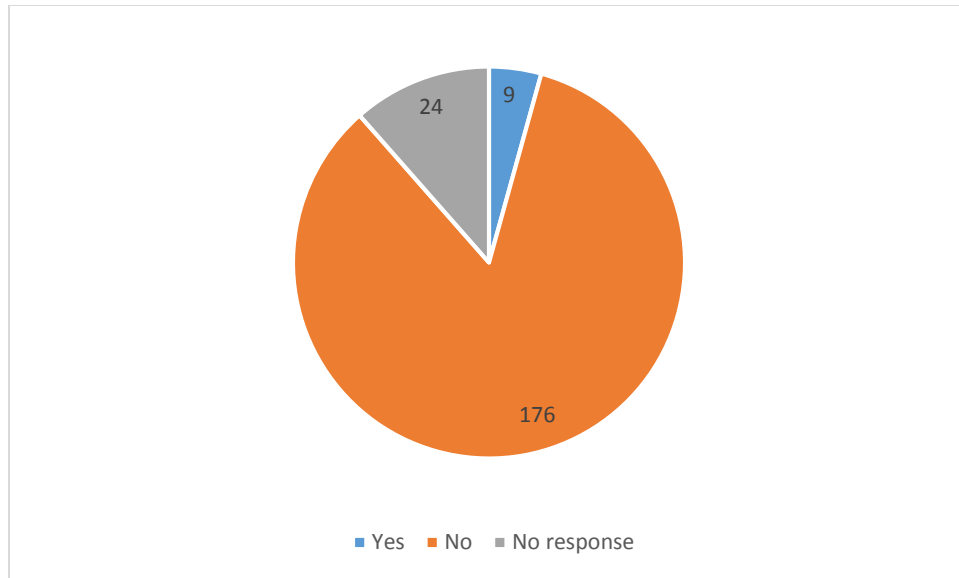


Figure 5.1 Awareness of legislative framework governing public libraries in South Africa, n=209

Deducing from the responses, 35% (74) indicated that they were aware of legislation governing public libraries in South Africa. The majority of respondents 57% (118) indicated that they were not aware of legislation governing public libraries in the country. It was observed that 8% (17) did not respond to this question. They did not mention anything when requested to do so in the next question.

#### 5.4.2.2 Awareness of regulatory policies on internet access in public libraries in South Africa

The respondents were asked about regulations or policies they think were applicable to internet access in public libraries. This question was directed to both the directors and the head librarians of public libraries (209). The responses are captured in figure 5.2.



n=209

Figure 5.2 Responses on the regulations or policies applicable to internet access

A total of 4.3% (9) of the respondents were aware of regulations or policies applicable to internet access in public libraries. They mentioned the Films and Publications Act, No. 65 of 1996, Promotion of Access to Information Act, No. 2 of 2000, Copyright Act, No. 98 of 1978, and their provincial internet usage policies as regulations applicable to internet access. The majority of respondents 84,2% (176) were not aware of such regulations and policies, while 11,5% (24) did not respond to the question.

#### 5.4.2.3 Effectiveness of regulatory policies for internet access

The study probed further respondents (9) who were aware of regulations or policies about the effectiveness of these regulations or policies in coordinating the provision of internet access to public libraries. The responses are captured in figure 5.3.

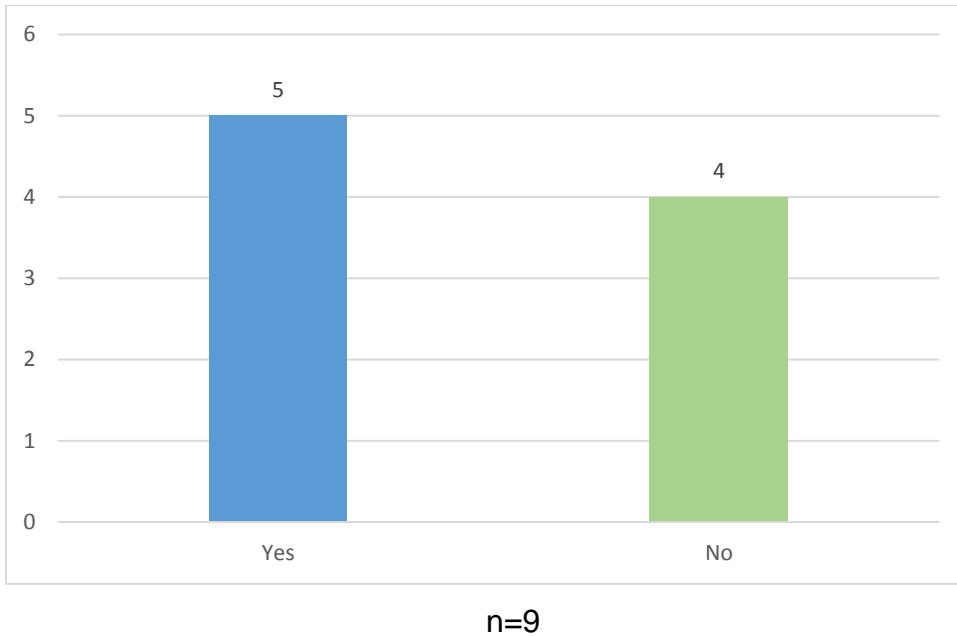


Figure 5.3 Effectiveness of regulations or policies in coordinating the provision of internet access to public libraries

According to the responses, five respondents agreed that the regulations or policies were effective in coordinating the provision of internet access to public libraries. On the other hand, four respondents maintained that the regulations or policies are not effective

### 5.4.3 ICT penetration

This section sought to gauge the penetration of ICT in public libraries.

#### 5.4.3.1 Total number of computers

To gauge ICT penetration in public libraries, both the directors and the head librarians (209) were asked to indicate the total number of computers, including tablets and laptops available in their libraries. Since the directors were responding to computers in the custody of head librarians, the researcher preferred analysing

data for this question from head librarians, as they manage these resources on a daily basis. Responses are captured in table 5.3.

<b>Number</b>	<b>Computers</b>	<b>Laptops</b>	<b>Tablets</b>
Rural libraries	1218	54	0
Urban libraries	1623	194	12
<b>Total</b>	<b>2841</b>	<b>248</b>	<b>12</b>

Table 5.3 Total number of computers, laptops and tablets n=203

From the responses, there were 2 841 computers, including those used by personnel in public libraries. Urban public libraries had the bulk (1 623) of these equipment, compared to their rural counterparts (1 281). This distribution was also applicable to laptops and tablets.

The distribution of the number of public libraries in relation to computers, laptops and tablets is reflected in table 5.4.

<b>Equipment type</b>	<b>Public libraries with less than 10 gadgets</b>		<b>Public libraries with 11 – 20 gadgets</b>		<b>Public libraries with 21+ gadgets</b>		<b>Location</b>	
	<b>Frequency</b>	<b>%</b>	<b>Frequency</b>	<b>%</b>	<b>Frequency</b>	<b>%</b>	<b>Rural</b>	<b>Urban</b>
Computers (PC)	120	59	75	37	8	4	82	121
Laptops	31	15	0	0	0	0	7	24
Tablets	12	6	0	0	0	0	0	12

Table 5.4 Number of public libraries with computers, laptops and tablets n=203

Note: % = Percentage



According to the responses, there were 59% (120) public libraries with fewer than 10 computers in each library. Those with fewer than 10 laptops were 15% (31) and 6% (12) had fewer than 10 tablets in their libraries. There were 37% (75) of public libraries with between 11 and 20 computers. Furthermore, 4% (8) of public libraries had more than 21 computers. It is evident from the responses that computers, laptops and tablets were available in all public libraries (203).

### 5.4.3.2 Computers accessible to patrons

This subsection focused on accessibility of computers to be used by patrons or library users.

#### 5.4.3.2.1 Number of computers accessible to patrons

The respondents were further asked to indicate how many of this equipment (computers, laptops and tablets) was accessible to patrons. The findings are captured in figure 5.4.

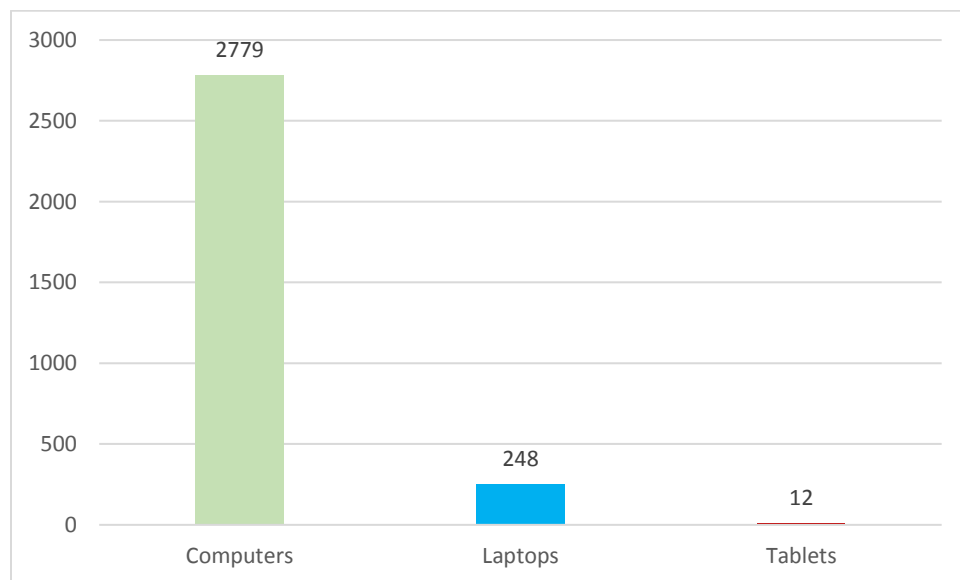


Figure 5.4 Equipment (computers, laptops and tablets) accessible to patrons

From the responses, 2 779 computers and followed by 248 laptops were available for patron use across public libraries. A few tablets (12) were also made available to patrons. The findings indicated that all the public libraries surveyed had computers accessible to patrons. Laptops and tablets were only available in fewer libraries.

#### **5.4.3.2.2 Challenges faced in providing computer access to patrons**

The respondents were asked about the challenges they face in providing patrons with access to computers. The question was directed to both the directors and the head librarians of public libraries (209). They mentioned the following as the challenges:

- Lack of physical space in the library. Some library buildings are too small to accommodate additional computers.
- Ageing computers which are too slow. It has been indicated that some libraries still have old computers with very slow processors.
- Intermittent power failures. The issue of power failures has been highlighted as one of the major challenges experienced by public libraries. When interviewees were probed further on this issue, they cited overloading as a factor as well as unstable electricity in the area.
- Limited time for patrons to use the computers. Due to the limited number of computers in the libraries, patrons are allocated limited time and, according to them, this results in dissatisfaction among patrons.
- Limited number of computers in relation to the patrons' ratio. Financial constraints and the confined physical space in the public libraries have a bearing on the limited number of computers.
- Users without computer skills who need constant assistance. Respondents indicated that patrons without computer skills consume a lot of their time, as they have to be assisted consistently. Some respondents (13) indicated

that they do not have computer skills or technicians on site to assist the patrons.

According to the respondents, the factors highlighted above constitute the major challenges that limit them from delivering effective services.

#### **5.4.3.3 Budget allocation (2013 – 2017)**

This subsection dealt with the allocation of budgets for the public libraries and ICTs from government over a period of five years.

##### **5.4.3.3.1 Total budget allocation to libraries (2013 to 2017)**

The respondents were asked to indicate the total budget allocated to their public libraries between 2013 and 2017. This question was posed to both the directors and the head librarians of public libraries (209). The responses are captured in table 5.5.

<b>Year</b>	<b>Cumulative allocated budget in Rands</b>
2013	602 680 000
2014	737 295 000
2015	812 433 000
2016	953 419 000
2017	1 053 646 000
<b>Total</b>	<b>4 159 473 000</b>

Table 5.5 Total budget allocated to public libraries from 2013 to 2017

Most heads of public libraries 97% (197) were reluctant to provide the figures, as they mentioned that their budgets were centrally managed. They referred the researcher to their directors from whom the figures were obtained. Only 3% (7) of

the heads of public libraries supplied the figures. These figures corresponded with those provided by the directors. Figure 5.5 is a depiction of the budgets.

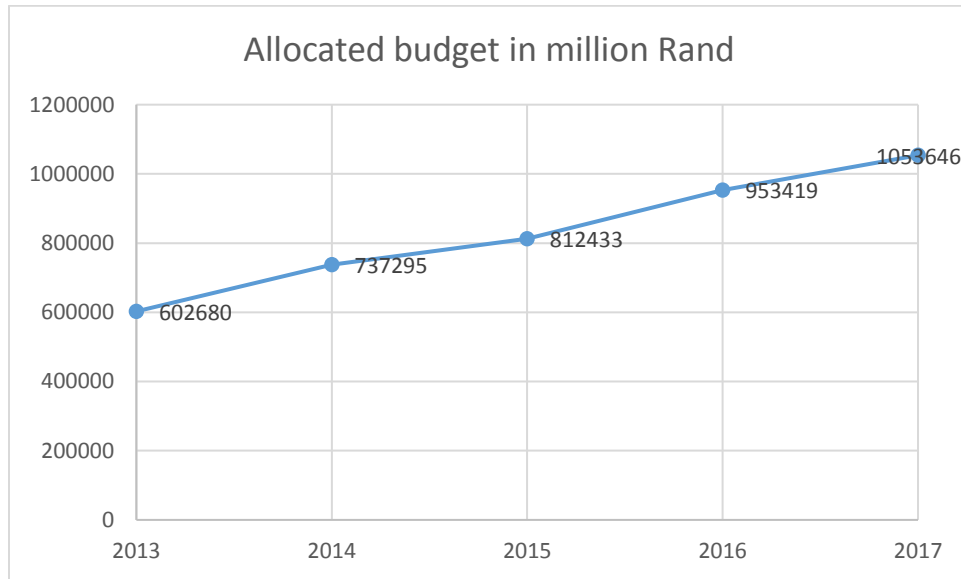


Figure 5.5 Diagrammatic representation of budget allocation

It is worth mentioning that the question on the budget allocation was meant to determine the funding level of all public libraries across the provinces. Therefore, these budget figures include public libraries that did not form part of the sample.

#### 5.4.3.3.2 Total budget allocation for ICT provision (2013 – 2017)

The respondents were asked how much of the library's budget go into the provision of ICTs in their libraries. Responses are captured in table 5.6.

No. of respondents	Response
2	5% of the total allocation
4	ICT budget is controlled by central ICT Department

n=6

Table 5.6 Portion of the library's budget that goes into the provision of ICTs (2013–2017)

According to the responses from the directors, 33% (2) indicated that ICTs were allocated 5% of the total library budget. This allocation, according to them, had to cater for all ICTs, including hardware, software and internet provision. The majority of directors/responses (67% (4)) indicated that the ICT budget for the entire provincial department was managed by the provincial central ICT department. As a result, they did not know how much budget was allocated to ICTs in their public libraries.

In terms of the budget allocated for internet provision, respondents mentioned that it was centrally controlled by the provincial ICT department and they did not know the amount or percentage allocated for internet provision.

#### 5.4.3.4 ICT support staff in public libraries

On the question of whether or not the public library had personnel/staff dedicated to assist users with ICT needs, both the directors' and the heads of libraries' responses (209) were as follows:

Yes		No	
Number	%	Number	%
167	80%	42	20

Table 5.7 Personnel/staff dedicated to assist users with ICT needs n=209

Most public libraries, 80% (167) had staff dedicated to assist users with ICT needs. Skills levels of dedicated ICT personnel ranged from basic computer literacy to an ICT qualification. On the other hand, 20% (42) of public libraries did not have any personnel dedicated to assist users with their ICT needs.

Those with dedicated personnel were probed further about how many were employed in their public libraries. They mentioned that they had placed an average of two staff members per library and that it also depended on the size of the library. These were some of the responses:

“Veldrif Public Library has 5 dedicated personnel to assist users with ICTs”

“Lephalale Public Library has 4 dedicated personnel to assist users with ICTs”

“Rayton Public Library has 5 dedicated personnel to assist users with ICTs”

“Delmas Public Library has 1 dedicated personnel to assist users with ICTs”

“Welgelee Public Library has 2 dedicated personnel to assist users with ICTs”

“Fauresmith Public Library has 1 dedicated personnel to assist users with ICTs”

Respondents who did not have dedicated personnel in their public libraries were further asked how they dealt with ICT needs of their patrons. They mentioned that ICT services were provided by the municipal ICT assistants who were placed at municipal ICT departments. These were some of the responses:

“We, as staff, try to assist as far as possible or call the Provincial IT specialist for telephonic assistance. Sometimes he also comes out to us to assist”

“The staff members are responsible, where they can’t give answers they refer the question to the IT staff from the department of CATA”

“If I have a problem with a computer or Internet I call the Head Office and they will take their time to come to the library with their ICT specialists”

“We are dealing with it by reporting to IT department and they will send the official to assist we do not have person for only libraries”

#### **5.4.4 Internet service provision**

This section sought to establish the extent of internet access in South African public libraries.

##### **5.4.4.1 Access to the internet**

Respondents were asked whether their libraries had internet access. This question was responded to by both the directors and the heads of libraries (209). The responses are captured in table 5.8.

<b>Internet access</b>	<b>Frequency</b>	<b>%</b>
Yes	203	97
No	6	3

Table 5.8 Access to internet n=209

Most respondents, 97% (203) indicated that their public libraries were connected to the internet. It was only a small margin at 3% (6) that did not have internet access. According to the responses, libraries that did not have internet access were those located in the rural areas.

#### 5.4.4.2 Mode of internet connectivity

The respondents were further asked to indicate the mode of connectivity of those that were connected to the internet. Table 5.9 represents the responses.

<b>Mode of connectivity</b>	<b>Number of respondents</b>	<b>Percentages</b>
ADSL (Asymmetric Digital Subscriber Line)	167	80
3G	0	0
Microwave	0	0
Satellite (VSAT)	25	12
Radio link	17	8

Table 5.9 Mode of internet connectivity in public libraries n=209

\*Table indicates multiple responses

It can be seen from the responses that most public libraries, 80% (167) were connected to the internet through the normal data line (ADSL). The responses indicated that all public libraries 100% (121) in urban locations were connected through this mode. Connectivity through satellite constituted 12% (25).

Other libraries, 8% (17) were connected to the internet through a radio link. The six interviewed respondents mentioned that satellite internet connectivity was unsustainable, as it cost their libraries more than the other two modes of connectivity. None of the respondents indicated the use of 3G or microwave for internet access in their public libraries.



#### **5.4.4.3 Reasons for lack of internet access in public libraries**

The respondents, 3% (6) who indicated that their libraries did not have internet access were asked the reasons for the lack of connection. They indicated that their public libraries did not have electricity installed. These were specifically modular or container libraries in rural areas.

The respondents, 97% (203) who had internet access in their libraries were further probed about the challenges they were experiencing in providing internet access to patrons in their libraries. They advanced the following reasons:

- Lack of space for additional computers
- Limited computers
- Lack of ICT skills to support patrons
- Old computers
- Administrative challenges between their provincial department and internet service provider
- Data being depleted before end of the month
- Lack of staff
- Budgetary constraints

Some of their responses included the following:

“Is the problem of a data that we finish before the end of the month”

“Patrons playing social media and do wrong staff using internet”

“No time allocation that we can be able to control it as librarians, so patrons can be in a computer for more than 5 hours”

“High number of patrons”

“Unstable internet; Downloading of pornography; They are always on youtube and Facebook; Stealing of hardware; Changing of pin codes”

#### 5.4.4.4 Rate of internet use in public libraries

Respondents were asked to rate the extent of internet use in their public libraries. This question was responded to by the heads of public libraries (203). In this case, respondents had to rate various internet services according to how they were used in their libraries. The scale was between 1 and 3, where 1 = less usage; 2 = average; and 3 = significant. The responses are captured in table 5.10.

Internet service	Rating	Frequency	Percentage
E-mail services	3	189	93
e-Government	2	107	53
Job applications	3	196	97
Study	2	98	48
News services	2	103	51
Library catalogue, e.g. SLIMS	1	29	14
Internet gaming	2	77	38
Online chats	2	83	41

Table 5.10 The extent of internet use in public libraries n=203

\*Table indicates multiple responses

According to the responses, the internet was used mainly (3) for e-mail services and job applications. This was according to 93% of the respondents. Online chats, internet gaming, news services, study and e-government were used averagely (2).

However, there was a lower rate of usage (1) of the internet for the library catalogue (SLIMS). It should be indicated that all public libraries that were surveyed used SLIMS as their library management system. The lower rate of

usage of the library catalogue indicated that patrons used the internet to access other services than the library collection. The implication was that majority of patrons that were using the library catalogue could be those that were studying. As a result, more efforts should be made by the libraries to market these services to their patrons. In addition, these services needed to be transformed and aligned to the patrons' changing needs to be able to attract usage.

#### 5.4.4.5 Quality of internet service

Respondents were asked to indicate the extent to which they agree or disagree with each statement relating to service quality and the library's satisfaction. This question was directed to heads of public libraries (203). The rating was on a scale of 1-3 where 1 = Disagree, 2 = Neutral and 3 = Agree.

Responses are captured in table 5.11 based on their broad themes, namely physical aspects, reliability, personal interaction, policy and problem solving.

Dimensions	Rating and number of respondents		
	Disagree (1)	Neutral (2)	Agree (3)
Physical aspects	13	0	190
Reliability	114	0	89
Personal interaction	28	4	171
Problem solving	107	2	94
Policy	101	69	33

Table 5.11 internet service quality and library satisfaction level n=203

\*Table indicates multiple responses

#### **5.4.4.5.1 Physical aspects**

According to the responses, 94% (190) agreed that the physical aspects of their ISPs were modern looking. This included equipment such as modems and satellite dishes.

#### **5.4.4.5.2 Reliability**

In terms of the ISP's reliability, 56% (114) of the respondents disagreed that their ISPs were reliable. Among issues raised were failure to address problems on agreed timelines, unstable internet access and inconsistent service deliverables.

#### **5.4.4.5.3 Personal interaction with ISPs**

When asked about personal interaction with their ISPs, 84% (171) agreed that they had personal interactions with their ISPs through visits to their libraries. The interactions were mostly to resolve reported problems.

#### **5.4.4.5.4 Problem solving**

Respondents were also asked about the capability of their ISPs to resolve problems they encountered in their libraries. Most of the respondents, 53% (107) disagreed that their ISPs were capable of solving their problems. They indicated that ISPs in some instances would leave their premises without resolving reported problems. This could be attributed to the challenges raised that some appointed ISPs were inexperienced. These were some of the responses:

“These people have no experience at all”

“Currently there is an Exco decision that gives office of the premier to appoint all IT services”

#### 5.4.4.5.5 Policy

When asked about whether their ISP's policy was favourable to the public libraries, 50% (101) disagreed. They mentioned that, for example, ISPs would replace damaged equipment at a cost, "something that was not clarified in the contract". Furthermore, respondents complained about the inconsistent application of their ISP's internet access policy. They indicated that, "We agreed on a 2mbps line but they reduce this during peak hours". One respondent further went on to say that "they change access rules as they please without informing us". There is, however, a sizable number 34% (69) of respondents who did not agree or disagree with the policy issues. An assumption was made that these respondents did not interact directly with the ISPs.

#### 5.4.4.6 Internet Service Providers utilised

Respondents were asked who their ISPs were. The responses were received from the directors of public libraries and are captured in table 5.12

Province	Internet service provider
Gauteng	Metro Trading Company (MTC), internet Solutions and Always On
KwaZulu-Natal	Thasitha
Limpopo	Mabapa Technologies
Mpumalanga	Business Connexion and Elangeni Consultants
North West	Meso ICT Solutions

Western Cape	Telkom and Western Cape Government Broadband Initiative (BBI), Neotel
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Table 5.12 Internet service providers in provinces

The responses indicated that each province had its own ISP. There were also multiple ISPs in provinces such as Gauteng, Mpumalanga and the Western Cape. Certain municipalities, for example Moses Kotane in North West and Emalahleni in Mpumalanga ad their own ISPs.

When probed further about the type of services these ISPs provided to their public libraries, all the 6 respondents (Directors of provincial departments) indicated that they provided only internet access. One respondent further said, “our internet service providers are contracted to provide only internet access. Anything above that will have to be re-negotiated at an added cost”. The implication was that provinces were explicit in their contractual obligations with their ISPs.

#### 5.4.4.7 ISP service level agreements

Respondents (6 Directors of provincial departments) were asked if they had a service level agreement in place with their ISPs. All six the respondents indicated that there were service level agreements in place. They were further probed to indicate the duration for which their ISPs were appointed. All six of them indicated that their ISPs were appointed for a period of three years. Respondents indicated that, initially, they appointed ISPs for a duration of two years but they realised that “two years elapse without having all listed libraries connected to the internet”.

Another respondent indicated that:

“ISPs raised a concern that ‘two years is insufficient for them to break even due to the high costs they incur”.

When asked about what their departments did upon expiry of the contract, they all said that they re-advertised. It is worth mentioning that it was a legal requirement to re-advertise the work upon expiry as mandated by the Public Finance Management Act (PFMA, No. 1 of 1999). Re-advertising was in compliance with this act.

#### **5.4.4.8 Sustainability of the ISP contracting process**

Respondents were further asked if the existing process of contracting ISPs for public libraries was sustainable. This was an interview question posed to the directors only.

Four respondents indicated that the existing process of contracting ISPs was not sustainable. They indicated the following challenges:

- Being disconnected for a prolonged period of time during the transition to a new ISP. The respondents highlighted that due to delays in appointing service providers, their libraries remain without internet access for a longer period. Therefore, libraries are incapacitated as they cannot provide internet access to the patrons who were used to this service.
- It takes long to appoint a new service provider. The lengthy process, coupled with starting the re-advertisement process at the end of the expiry of the contract, impact negatively on public libraries to effectively provide this service.
- Appointing service providers with limited expertise. Concerns were raised that in some instances services providers with limited experience were appointed. This affected public libraries in that some libraries remained without internet access as the appointed service providers lacked the expertise. Human capacity from the ISPs' side was also flagged as a concern.

- Being stuck in an unfulfilling contract. Contracts were crafted in such a way that it was restrictive and did not allow any flexibility. Reference was made to penalty clauses and the option of termination in poor service delivery or performance.

Two respondents agreed that the existing process of contracting ISPs was sustainable. These respondents were satisfied with the process as they indicated that their advertising and contracting processes were done well in advance. It should be mentioned that contracts for libraries in agreement with the process was managed outside the ambit of their departments, through the State Information Technology Agency (SITA); hence, they did not encounter procedural and structural challenges.

#### **5.4.4.9 Internet bandwidth**

This subsection focused on the internet capacity provided to public libraries by ISPs.

##### **5.4.4.9.1 Bandwidth capacity**

The 6 respondents (Directors of the provincial departments) were asked about the bandwidth capacity they received for their public libraries. The following responses were advanced:

One respondent indicated that they had a bandwidth of 2 megabits per second (mbps) per library. The respondent further mentioned that the province was working on the “new specifications to be advertised which would see libraries having a 4mbps”. On the other hand, two respondents indicated that their public libraries were at 4mbps per library. However, one of the two respondents also mentioned that “some smaller libraries had 2mbps”.



The remaining two respondents indicated that their libraries shared a pool of backbone-dedicated bandwidth link. In one area, 2gbps of backbone link was allocated to public libraries. One respondent did not know the bandwidth capacity allocated to the public libraries. Deducing from the responses, it is apparent that the bandwidth allocation across provincial libraries was not standardised. For example, KwaZulu-Natal had a 4mbps allocated to the bigger libraries and 2mbps to the smaller libraries.

#### **5.4.4.9.2 Bandwidth capacity allocation**

When asked whether the bandwidth capacity allocated was sufficient for their public libraries, one (1) respondent agreed that it was sufficient. Most (5) of the respondents indicated that the allocated bandwidth was insufficient for their public libraries.

#### **5.4.4.9.3 Reasons for insufficient bandwidth capacity**

When respondents (Directors) were asked to advance what the reasons were for their response to insufficient bandwidth capacity, they mentioned the following:

”We had to top up before the end of the month because the allocated bandwidth would be depleted”

“We would have no internet access towards the end of the month. Upon depletion of bandwidth, internet would be cut off because their contracts with ISPs did not allow top up”

“The internet connection was too slow. Towards depletion of bandwidth, connection would be slowed down extremely until the end of the month”.

#### **5.4.4.9.4 Exceeding allocated monthly bandwidth**

Respondents (Directors) were asked whether any of their public libraries exceeded their allocated monthly bandwidth capacity.

According to the responses, four libraries did not exceed the allocated monthly bandwidth. This was due to the tight contract with the ISP which did not allow for exceeding the allocated capacity. To curb the high usage, ISPs limit internet access at certain times.

One respondent indicated that they exceeded the allocated monthly bandwidth. The respondent indicated that their contract with their ISP allowed flexibility by deducting excess usage from the following month. Another respondent (1) mentioned that she did not know whether the bandwidth was exceeded because internet access and use was the responsibility of the ICT department.

#### **5.4.5 Challenges faced in providing internet access to public libraries**

Respondents were asked to indicate the constraints/challenges they faced in ensuring sustainable internet access to public libraries. This question was responded to by the directors of public libraries. The following were identified:

- Financial or budgetary constraints.

“If the conditional grant was to be withdrawn, equitable share might not be enough to sustain the internet provision”.

- Lack of ICT infrastructure.

“ICT infrastructure is inadequate and, in some areas, non-existent and this affected internet access”.

Neither data lines nor fibre was available in most rural areas, which fuelled the high internet costs due to the use of other means such as the satellite and 3G.

- Connectivity in the rural areas posed to be one of the challenges.  
"Some of our rural areas have poor road infrastructure and are generally under-developed".
- Expensive connectivity.  
"Connecting libraries to the internet is expensive to the extent that fewer libraries are connected".
- Performance of contracted service providers was unsatisfactory according to the respondents and as a result, there were access disruptions more often. One respondent went further to say that "we agreed we will only pay them as per the internet uptime per library".

#### **5.4.5.1 Suggested remedies to internet access**

Respondents were further asked to propose solutions that would ensure/enhance sustainable internet access to public libraries in their province and nationally. The following responses were provided:

"Phase out satellite connectivity"

"Fibre connectivity should be extended to rural areas"

"Data lines (cabling) should be extended to rural areas"

"Budget allocated through equitable share should be increased (more funding required)"

"Appointment of reliable internet service providers"

## **5.5 SUMMARY**

This chapter presented and interpreted the findings of the study. Collected data pertaining to the extent of public library development, legislative framework governing public libraries, ICT penetration in public libraries as well as internet service provision to public libraries was presented and interpreted. Most public libraries were built and refurbished post 1994. This was as a result of enabling legislative framework aimed at transforming the LIS sector. Provision of computers and internet access was a critical part of this process. The next chapter presents the discussion of the findings of the study.

## **CHAPTER 6**

### **DISCUSSION OF THE FINDINGS**

#### **6.1 INTRODUCTION**

The previous chapter presented the findings of the study collected through interviews and questionnaire. This chapter discusses and interprets the findings based on the research objectives stipulated in Chapter 1, section 1.5.2. The discussion of findings interprets and describes the data collected from the sampled participants (Babbie & Mouton 2001:49; Creswell 2003:13; 2009:12; 2014:155).

To provide an understanding of the study, the collected data was discussed based on the following research objectives:

- To ascertain the extent of public library development in South Africa
- To examine the legislative framework governing public libraries in South Africa
- To determine the level of ICT penetration in South African public libraries
- To gauge the level of internet connectivity in South African public libraries
- To identify challenges in the provision of internet access to South African public libraries
- To formulate strategies that could be implemented in the commissioning of sustainable internet access to public libraries

#### **6.2 BACKGROUND INFORMATION**

Demographic data was necessary to set the context and background information for discussing the findings of the study. As indicated in section 5.3, the respondents were asked to give the province where they were located as well as the name of the library they worked at. This was done to ensure that the province and the library

the respondents represented were known without divulging their responses for confidentiality purposes.

The researcher found that the higher response rate of 60% (121) came from urban libraries, as opposed to a 40% (82) response rate from rural libraries. This is a reflection of the sample size where urban public libraries constituted the majority of libraries at 64%, as discussed in section 4.5.4.2. The outcome confirmed that the majority of public libraries still existed in urban communities (LIS Transformation Charter 2014; NLSA 2015:4). However, the Community Library Conditional Grant Programme was implemented as one of the key transformative drivers to address unequal development in the LIS sector. This notion is further affirmed by Hart (2010:82) who indicates that government support is contingent upon public libraries playing a more dynamic role in the transformation of the South African society.

According to the Department of Arts and Culture (2016), the following are critical to the Community Library Conditional Grant Programme:

- Improved coordination and collaboration between national, provincial and local government on library services
- Transformed and equitable library and information services delivered to all rural and urban communities
- Improved library infrastructure and services that reflect the specific needs of the communities they serve
- Improved staff capacity at urban and rural libraries to respond appropriately to community knowledge and information needs
- Improved culture of reading

### **6.3 EXTENT OF PUBLIC LIBRARY DEVELOPMENT IN SOUTH AFRICA**

This section sought to ascertain the development of public libraries in South Africa.

### 6.3.1 Development of public libraries in South Africa

The study found that all respondents, 100% (209) indicated that libraries were not well developed pre-1994, except in the former white communities. This correlates with Dick (2007:16) in his assertion that before 1994, public libraries, like other sectors in South Africa, were established along the racial lines.

This argument is further reiterated in the Library and Information Services Transformation Charter (2014:55) which states that:

*“The location of many public libraries has been influenced by former apartheid spatial planning with the result that many areas, such as former townships, informal settlements and rural areas are under-served or not served at all. There are a number of municipalities where there are no libraries at all, a situation affecting more than two million people. Linked to the inequities flowing from geographical location is the historically uneven resourcing between established libraries in the suburbs and those in townships and rural areas”.*

It was clear from the responses that all participants (209) acknowledged the development of public libraries after 1994. This correlates with the reports of the National Library of South Africa (2015) and the national Department of Arts and Culture (2016) which indicate an exponential growth in the number of public libraries in South Africa.

It can be said that the political will played a significant role in the development of libraries in South Africa. This is evident through initiatives such as the following:

- The Bill of Rights, which is enshrined in the Constitution of the Republic of South Africa (Act No. 108 of 1996). The Bill of Rights, among others, guarantees that people have the right to information if they need that information to protect their rights.

- National Council of Library and Information Services (Act No. 6 of 2001). This act sets out to “provide strategic leadership and advocacy for literacy, a culture of reading and writing, innovation and open access to information”.
- KPMG report: Impact assessment study (2007). This report is a project initiated by the South African government to address deteriorating service levels and lack of funding in the country’s public and community library sector.
- Department of Arts and Culture (Community Library Conditional Grant Programme 2016). The purpose of the conditional grant was to transform urban and rural community library infrastructure, facilities and services (primarily targeting previously disadvantaged communities) through a recapitalised programme at provincial level in support of local government and national initiatives.
- South African Community Library and Information Services Bill (2012). The Bill aims to:
  - ensure consistency in the delivery of public library and information services in the country
  - put in place measures to ensure redress of the inequalities in the provision of public library and information services
  - provide for principles, norms and standards for the provision of public library and information services (2012:1).
- Library and Information Services Transformation Charter, 7<sup>th</sup> ed (2014). The LIS Transformation Charter addresses the key challenges facing the LIS sector and provides a framework that would help to eliminate illiteracy, eradicate inequality in the sector, promote social cohesion and build an informed and reading nation.

These initiatives were a result of the political will and have contributed immensely to the development of public libraries in South Africa. Although the development was visible, more still needed to be done to build public libraries in the rural areas of the country. Permanent library physical structures need to be erected to also



replace modular or container libraries, which pose sustainability challenges. This should be driven by increased funding to public libraries.

## **6.4 LEGISLATIVE FRAMEWORK**

This section sought to examine legislative framework governing public libraries in South Africa.

### **6.4.1 Awareness of legislative framework governing public libraries in South Africa**

In any organisation, especially in government, regulations and policy frameworks play a significant role in setting rules and standard procedures governing relevant sectors (Mojapelo 2014:195). The LIS sector also has legislation governing its functions as indicated in the preceding paragraphs. The findings of the study indicated that the majority of respondents 57% (118) were not aware of legislative and policy frameworks governing the LIS sector. This was a worrying factor, as the main reason for the existence of legislation in the sector was to ensure that public libraries are functioning and developed within the legal framework (IFLA/UNESCO 1994). The implication was that the respondents were performing their daily library duties in a vacuum without reference to any legal framework.

Generally, a lack of awareness of regulations and policies implies that the respondents would probably not know the importance of such legislation.

The 35% (74) who indicated their awareness of the legislation governing public libraries in South Africa mentioned knowledge of the following legislation:

- Constitution of the Republic of South Africa (Act No. 108 of 1996)
- National Council of Library and Information Services (Act No. 6 of 2001)
- National Library of South Africa (Act No. 92 of 1998)
- Library and Information Services Transformation Charter 2008

- Public Finance Management (Act No. 1 of 1999)
- Municipal Finance Management (Act No. 56 of 2003) and
- Provincial Ordinances

The high number of respondents (57%) who were not aware of legislation governing their sector was of great concern. Like in any sector, legislation and policy frameworks play a significant role in the governance of LIS stakeholders. IFLA/UNESCO Public Library Manifesto (1994) attest that the public library must be supported by specific legislation and must be financed by national and local governments. Therefore, efforts need to be made to ensure that personnel are made aware of the regulations impacting on their sector.

#### **6.4.2 Awareness of regulatory policies on internet access in public libraries in South Africa**

Awareness of regulations and policies governing internet access was also poor. A few percentage (4.3%) of the respondents were aware of regulations or policies applicable to internet access in public libraries and this was of concern. They mentioned the Films and Publications Act, No. 65 of 1996, Promotion of Access to Information Act, No. 2 of 2000, Copyright Act, No. 98 of 1978, and their provincial internet usage policies as regulations applicable to internet access. These responses indicated a lack of awareness of regulations pertaining to internet access. It is implied from examples provided that internet access in their public libraries was regulated by individual provincial internet access policies. Apart from regulations at a national level such as the Electronic Communications Act, No. 36 of 2005 (ECA), ICASA Act, No. 13 of 2000, Electronic Communications and Transactions Act, No. 25 of 2002, and the National Broadband Policy National Radio Frequency Spectrum Policy, other policy directives such as provincial ordinances regulating internet access were managed at a provincial or local level (Krolak 2005; Dick 2007; Cull 2009; Hart 2010; NLSA 2015).

### **6.4.3 Effectiveness of regulatory policies for internet access**

The study established that Directors (5) who indicated the effectiveness of regulations or policies in coordinating the provision of internet access to public libraries were actually referring to the provincial policies regulating internet access rather than national legislation on internet access. It can be deduced from these responses that what was considered effective were actually the provincial policies regulating internet access rather than national legislation on internet access. This is mainly due to the fact that what respondents provided as regulations governing internet access in public libraries have little to do with internet access regulation. This was because of contradictions on the part of the respondents.

In any organisation, especially in government, regulations and policy frameworks play a significant role in setting rules and standard procedures governing relevant sectors. The LIS sector also has legislation governing its functions as indicated in the preceding paragraphs. The findings of the study indicated that the majority of respondents 57% (118) were not aware of legislative and policy frameworks governing the LIS sector as reflected in section 5.4.2.1. This was a worrying factor, as the main reason for the existence of legislation in the sector was to ensure that public libraries are functioning and developed within the legal framework (IFLA/UNESCO 1994). The implication was that the respondents were performing their daily library duties in a vacuum without reference to any legal framework. On the other hand, awareness of regulations and policies governing internet access was also poor. Generally, a lack of awareness of regulations and policies implies that the respondents would probably not know the importance of such legislation.

## **6.5 ICT PENETRATION**

This section sought to gauge the penetration of ICT in public libraries.

### **6.5.1 Total number of computers available for use**

The findings established that there were 2 841 computers, including those used by personnel in public libraries as reflected in table 5.3. Urban public libraries had the bulk (1 623) of these equipment, compared to their rural counterparts (1 218). Given the urban-rural ratio of public library development, the difference in terms of the number of computers available was not significant.

The distribution of computers in the libraries indicate the extent of ICT penetration in public libraries, notwithstanding the fact that computers are just one component of ICTs. Shuva (2005:159) and Nwabueze and Ibeh (2013:27) confirm that technologies for collecting, storing, processing and communicating information (ICT) are divided into two main categories, namely those that process information, such as computer systems, and those that disseminate information, such as telecommunication systems.

Laptops and tablets on the other hand were not only available to the previously advantaged public libraries, but were gradually introduced to the other public libraries as well as reflected in table 5.4. This observation concurs with examples from literature; for example, through the introduction of Mzansi Libraries Online Project, more public libraries began to benefit from free access to computer equipment such as laptops (NLSA 2015). This project mainly focused on “empowering South African communities to improve their lives through the provision of free access to vibrant library spaces, technologies and services, sustained through strategic, collaborative partnerships and facilitated by skilled, dynamic librarians, who understand and proactively respond to the evolving needs of their users” (NLSA 2015).

### **6.5.2 Challenges faced in providing computer access to patrons**

In section 5.4.3.2.2, it became apparent that there were many challenges experienced by public libraries in the providing computer access to users. The following challenges were mentioned:

- Lack of physical space in the library. Some library buildings are too small to accommodate additional computers.
- Ageing computers which are too slow. It has been indicated that some libraries still have old computers with very slow processors.
- Intermittent power failures. The issue of power failures has been highlighted as one of the major challenges experienced by public libraries. When interviewees were probed further on this issue, they cited overloading as a factor as well as unstable electricity in the area.
- Limited time for patrons to use the computers. Due to the limited number of computers in the libraries, patrons are allocated limited time and, according to them, this results in dissatisfaction among patrons.
- Limited number of computers in relation to the patrons' ratio. Financial constraints and the confined physical space in the public libraries have a bearing on the limited number of computers.
- Users without computer skills who need constant assistance. Respondents indicated that patrons without computer skills consume a lot of their time, as they have to be assisted consistently. Some respondents (13) indicated that they do not have computer skills or technicians on site to assist the patrons.

Financial constraints were a huge factor impacting on space, additional computers and staffing. This was a problem affecting public libraries globally (Gill 2001; Salman et al 2017). Levien (2011) affirms that governments face the need to cut back services as a result of declining revenue and other budgetary pressures. Omotosho and Okiki (2012) further concur that the financial crisis has affected the structure and maintenance of the building, the size and the contents of the

collections and the overall provision of services. Therefore, since public libraries are funded mostly by governments, they are also adversely affected by the economic meltdown (Guarria & Wang 2010:201).

### **6.5.3 Budget allocation (2013 – 2017)**

This section dealt with the allocation of budgets for the public libraries and ICTs from government over a period of five years. It was established from the study that the ICT budget is managed centrally within a province by the Finance Department.

It can be seen from table 5.5, the budget allocations for public libraries have been growing steadily. A key factor contributing to this growth was the allocations made to public libraries through the Conditional Grant Programme. Respondents also indicated that since the introduction of the Conditional Grant Programme, provinces used this grant to replace equitable share allocation, which is the normal budget allocation made by the provincial government to public libraries. Nonetheless, interestingly, the budget allocation has been growing despite budget cuts in other sectors (Department of Arts and Culture 2016).

As alluded to by Levien (2011), governments at every level face the need to cut back services as a result of declining revenue and other budgetary pressures. While the argument put forward by Levien remains relevant to this day, additional allocations such as ring-fenced budgets and donor funds boost the libraries' budgets. In this case, the conditional grant for public libraries contributed immensely in the growth of public libraries budgets.

### **6.5.4 ICT support staff in public libraries**

It was encouraging to note that most public libraries (80%) had staff dedicated to assist users with ICT needs. In KwaZulu-Natal, for example, these personnel were

commonly referred to as cyber cadets. Skills levels of dedicated ICT personnel ranged from basic computer literacy to an ICT qualification. ICT assistance to patrons has been increasingly on demand. This was because of the introduction of ICT services in public libraries where the services have been overwhelmingly embraced by patrons.

Lack of the required ICT skills among the librarians led to these skills being scouted elsewhere. Financial constraints, however, have been a limiting factor to have skilled ICT personnel in each public library. Based on these limitations, it became critical for librarians to also be skilled in basic ICT competencies to better serve their patrons.

## **6.6 INTERNET SERVICE PROVISION**

This section sought to establish the extent of internet access in South African public libraries.

### **6.6.1 Access to the internet**

It has been established in section 5.4.4.1 that most public libraries 97% (203) have internet access. However, the few libraries 3% (6) that did not have access to the internet were those located in the rural areas. This observation concurs with Mutula (2001), the KPMG report (2007) and Nzivo (2012) who affirmed that internet services were confined to libraries that are mostly in the urban areas.

The findings established that most public libraries (80%) were connected to the internet through the normal data line (ADSL). From the responses, all public libraries (121) in urban locations were connected through this mode. This again confirms that the ICT infrastructure in urban centres is well established as opposed to the rural counterparts. Alternatively, public libraries that were connected to the internet through satellite means were mostly found in the far-flung rural areas.

These areas included Ga Phaahla, Shongwane, Bankhara, Betty Peters Library, Madibogopan, Kgakala and Blyvooruitsig Library.

Despite the higher cost, in terms of coverage, satellite connectivity was available virtually everywhere. Satellite was a great choice for rural internet access, since many other internet services did not cover these areas (Kinney 2010:107). Unlike satellite connectivity, cable or fixed lines (ADSL) were available in areas where cables were installed. Claire (2017:16) indicated that although cable internet was available in most urban and surrounding areas, its coverage did not extend to many rural areas. Equally, to get reliable cable internet, one needed to live relatively close to one's service provider and this further limit one's access to the internet (HughesNet 2017).

#### **6.6.2 Reasons for lack of internet access in public libraries**

While there is internet access in most public libraries, those without internet access 3% (6) depicted in table 5.8 were mostly hindered by the lack of electricity. These were specifically modular or container libraries in rural areas. Those with internet access (97%) advanced the following challenges experienced in providing internet access to patrons:

- Lack of space for additional computers
- Limited computers
- Lack of ICT skills to support patrons
- Old computers
- Administrative challenges between their provincial department and internet service provider
- Data being depleted before end of the month
- Lack of staff
- Budgetary constraints



Mphidi (2017:146) highlights that most of these challenges are prevalent in many public libraries in South Africa. Through coherent processes, administrative challenges such as contractual procedures with service providers and data usage can be overcome. Lack of computer skills can be addressed by re-skilling librarians with these requisite skills. Limited computers could be due to limited space in the libraries. This is especially true with the old refurbished buildings and modular libraries. To a certain extent, newly built public libraries have smaller buildings, with the exception of the few, while some of the community buildings which were not intended to be libraries, have been converted into public libraries (KPMG report 2007).

### **6.6.3 Utilised Internet Service Providers**

According to the responses, each province had its own ISP as depicted in table 5.12. There were also multiple ISPs in provinces such as Gauteng, Mpumalanga and the Western Cape. Certain municipalities, for example Moses Kotane in North West and Emalahleni in Mpumalanga had their own ISPs. It should be noted that regulations governing the three spheres of government, namely national, provincial and local, dictated that provincial governments should transfer funds to local governments (KPMG 2007). In this regard, local governments or municipalities had the prerogative to decide on service providers. Public libraries were therefore no exception to this legislation.

### **6.6.4 Internet bandwidth**

The study established that public libraries had been allocated a 4mbps per site with the exception of smaller libraries which were given a 2mbps per library. This was a prevailing bandwidth capacity at the time. Currently a bandwidth capacity of more than 10mbps per site is available. To mitigate against the insufficient bandwidth capacity, libraries resorted to the following options indicated in section 5.4.4.3:

- They had to top up before the end of the month because the allocated bandwidth would be depleted
- They would have no internet access towards the end of the month. Upon depletion of bandwidth, internet would be cut off because their contracts with ISPs did not allow top up.
- The internet connection was too slow. Towards depletion of bandwidth, connection would be slowed down extremely until the end of the month.

Deducing from the responses, it is apparent that the bandwidth allocation across provincial libraries was not standardised. For example, KwaZulu-Natal had a 4mbps allocated to the bigger libraries and 2mbps to the smaller libraries as shown in section 5.4.4.9.1.

#### **6.6.5 Allocated monthly bandwidth capacity**

It was established from the responses indicated in section 5.4.4.9.4 that public libraries did not allow bandwidth to be exceeded. This was ensured through tight service level agreements with internet service providers. Public libraries globally provided internet access with limitations due to the economic factors inherent in the provision of access to the internet (Parent & Cruickshank 2009; Bertot 2011; Singh 2015). This can be attributed to the strict budget monitoring and/or putting libraries in a shared bandwidth pool. The shared bandwidth pool allows the ISP to monitor and re-allocate bandwidth among libraries according to the usage. The disadvantage of this approach was that the ISP could include libraries or organisations they support from other areas within one pool to reduce their costs.

Generally, the provision of internet access to public libraries was a noble service delivery imperative despite the reported challenges. Finneman (2007) argues that the internet continues to penetrate different spheres of peoples' lives and it has become an integral part of the overall media structure. It is through access to this

resource that the digital divide that is visible in rural and urban areas can be bridged (Mphidi 2017). However, infrastructure stemming from a sound budget needs to be in place. Provision of internet access in public libraries remains a challenge although strides have been made to provide access to this commodity (Mwesige 2008; Sulah 2012; Wanas 2012; Radijeng 2013).

## **6.7 CHALLENGES FACED IN PROVIDING INTERNET ACCESS TO PUBLIC LIBRARIES**

The study established that there were challenges faced in providing internet access to public libraries. These challenges as identified in section 5.4.5 include:

- Financial or budgetary constraints. Respondents were concerned that if the conditional grant was to be withdrawn, equitable share might not be enough to sustain the internet provision.
- Lack of ICT infrastructure. Respondents mentioned that ICT infrastructure was inadequate and, in some areas, non-existent and this affected internet access. Neither data lines nor fibre was available in most rural areas, which fuelled the high internet costs due to the use of other means such as the satellite and 3G.
- Connectivity in the rural areas posed to be one of the challenges, as respondents mentioned that some rural areas had poor road infrastructure and were generally under-developed.
- Expensive connectivity. Respondents mentioned that connecting libraries to the internet was expensive to the extent that fewer libraries were connected.
- Performance of contracted service providers was unsatisfactory according to the respondents and as a result, there were access disruptions more often. One respondent went further to say that “we agreed we will only pay them as per the internet uptime per library”.

It is evident from the responses that financial constraints played a critical role in ensuring sustainable internet access to public libraries (Bertot et al. 2011; NLSA 2012; Mugwisi et al. 2016).

## **6.8 SUMMARY**

This chapter discussed the findings of the study supported by literature where possible. Although all respondents (100%) indicated that libraries were not well developed pre-1994, they acknowledged that political will through legislation contributed immensely to the current improved public library services.

It has been found that ICT has penetrated public library service where almost all public libraries have computers available for patron use. On the other hand, the provision of internet access proved to be imperative in bridging the digital divide.

The next chapter presents summary, conclusions and recommendations

## **CHAPTER 7**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **7.1 INTRODUCTION**

The aim of the study was to investigate how sustainable internet access could be provided to public libraries in South Africa. Although the study was mainly qualitative, the quantitative method in the form of a questionnaire was also used to investigate the object of the study in detail. The study was guided by the following objectives:

- To ascertain the extent of public libraries' development in South Africa
- To examine the legislative framework governing public libraries in South Africa
- To determine the level of ICT penetration in South African public libraries
- To gauge the level of internet connectivity in South African public libraries
- To identify challenges in the provision of internet access to South African public libraries
- To formulate strategies that could be implemented in the commissioning of sustainable internet access to public libraries

This chapter presents the summary, conclusions and recommendations of the study. Similarly, conclusions were also made about the research objectives to determine to what extent they have been met.

#### **7.2 SUMMARY OF RESEARCH FINDINGS**

This section presents the summary of the findings to address the research problem namely:

*How can sustainable internet access be provided to public libraries in South Africa?*

Furthermore, the findings of the study were summarised as per the following research questions:

- What is the extent of public library development in South Africa?
- What are the legislative imperatives governing public libraries in South Africa?
- What is the level of Information and Communications Technology (ICT) penetration in public libraries?
- What is the level of internet connectivity in public libraries?
- What challenges are experienced in providing internet access to public libraries in South Africa?
- What strategies can be formulated in the implementation and commissioning of sustainable internet access to public libraries?

The research problem and the different sub-problems through research objectives are interpreted in the same sequence in which they were discussed throughout the study. The purpose is to establish whether each of them and, consequently, the research problem have been addressed adequately.

### **7.2.1 Characteristics of respondents**

The target group for the study was 331 respondents, comprising 322 head librarians from both rural and urban public libraries and nine directors of public libraries. Questionnaires were sent to the 322 sampled head librarians, whereas interviews were scheduled with the nine directors. Out of 322 questionnaires, 203 were returned and six out of nine directors were interviewed, as reflected in table 5.1. The response rate achieved for this study was 63%.

The respondents were asked to furnish the province they were located in as well as the name of the library they worked at. This was done to ensure that the province and the libraries that the respondents represented were known without divulging their responses for confidentiality purposes. Furthermore, the respondents were requested to furnish the locations of their libraries, as reflected in table 5.2.

## **7.2.2 Extent of public library development in South Africa**

Objective one:

To ascertain the extent of public library development in South Africa.

What is the extent of public library development in South Africa?

Findings on the extent of public library development in South Africa, as shown in table 5.1 and subsection 5.4.1.1 established that the following:

- There is an overwhelming (100%) acknowledgement that there was separate development for public libraries in South Africa, as shown in table 5.1 and subsection 5.4.1.1. This was in line with the segregation policies pre-1994.
- Public libraries have experienced positive development after 1994. The developments are attributed to the political will as well as pro-legislation towards public libraries.
- Improved funding for public libraries. Most respondents (82%), as shown in figure 5.5 and table 5.5, acknowledged that funding for public libraries has improved.
- The introduction of the conditional grant for community libraries contributed immensely to the development of public libraries. Through this grant, new public libraries were built and old library buildings were refurbished.

- There is a well-established and well-structured public library network administered through the national Department of Arts and Culture dedicated to the well-being of public libraries in the country.

### 7.2.3 Legislative framework

#### Objective two:

To examine legislative framework governing public libraries in South Africa

What are the legislative imperatives governing public libraries in South Africa?

Findings on the legislative framework, as shown in tables 5.1 and 5.2 established that the following:

- The existing legislation in the LIS sector includes the Constitution of the Republic of South Africa (Act No. 108 of 1996), the National Library of South Africa Act (Act No. 92 of 1998), the National Council for Library and Information Services Act (Act No. 6 of 2001), the Legal Deposit Act (Act No. 54 of 1997), Copyright Act (Act No. 98 of 1978), the South African Public Library and Information Services Bill (2010), the Protection of Personal Information Act (Act No. 4 of 2013) and the Library and Information Services (LIS) Transformation Charter (2014).
- These enacted legislation provided an enabling environment for the development of public libraries in South Africa.
- Most librarians (56.5%) are not aware of the existence of the majority of these pieces of legislation as shown in figure 5.1.
- Only 35.4% of public librarians were aware of legislation governing public libraries.
- The majority of respondents (84.2%) were not aware of regulations pertaining to the provision of internet access as reflected in figure 5.2. This implied that they would not know the effectiveness of these regulations.



- Respondents (56%) were of the opinion that provincial policies, mainly through the ISPs, were regulating internet access in public libraries rather than national legislation on internet access.

#### **7.2.4 ICT penetration**

##### Objective three:

To determine the level of ICT penetration in South African public libraries.

What is the level of Information and Communications Technology (ICT) penetration in public libraries?

Findings on the ICT penetration, as shown in table 5.4, indicated that the following:

- Almost all public libraries have computers. These computers are dedicated for patrons use.
- One hundred and twenty public libraries (59%) have fewer than ten computers in each library. The number of computers per library depends on the size of the library building.
- Laptops and tablets are also available in some public libraries. These gadgets are available in better equipped libraries. However, some of them were placed in selected public libraries for the Mzansi Online Project.
- Challenges identified in providing patrons with access to computers included:
  - Lack of physical space in the library
  - Aging computers that are too slow
  - Intermittent power failure
  - Limited time for patrons to use the computers
  - Limited number of computers
  - Users without computer skills who need constant assistance
- Most public libraries (80%) have staff dedicated to assist patrons with ICT needs, as shown in table 5.7. Those libraries without dedicated ICT personnel to assist patrons use municipal ICT assistants.

- The budget for allocations for public libraries has been growing steadily. Again, this is attributed to the conditional grant programme.
- Only 33% of public libraries allocate 5% of their total departmental budget to ICTs. This portion caters for hardware, software and internet provision.
- The majority (67%) of the libraries' ICT budget is controlled by the provincial ICT department.
- The budget for internet access is managed centrally by the provincial ICT department.

### **7.2.5 Internet service provision**

#### Objective four:

To gauge the level of internet connectivity in South African public libraries.

What is the level of internet connectivity in public libraries?

Findings on the internet service provision, as shown in tables 5.8 and 5.9 and subsections 5.4.4.7 and 5.4.4.8, established that the following:

- Most public libraries (97%) are connected to the internet. The few (3%) libraries that do not have internet access are those located in the rural areas. These are modular or container libraries without electricity.
- The majority (80%) of public libraries connect to the internet through a fixed data line (ADSL).
- Only 12% of public libraries connect to the internet through satellite (VSAT).
- In public libraries, the internet is mainly used for e-mail services and job applications. Other categories of use such as studying, library catalogue searching and chatting are used less.
- Each province has its own ISP. Some provinces use multiple ISPs.
- Service level agreements regulating engagements with the ISPs are signed. These agreements remain in place for a period of three years.

- Most respondents (67%) indicated that the existing process of contracting ISPs is not sustainable.
- The bandwidth capacity allocated to each public library ranges from 2mbps to 10mbps. However, in some instances, libraries share a pool of dedicated bandwidth capacity. The implication is that bandwidth across public libraries is not standardised.
- The bandwidth capacity allocated to libraries is insufficient as attested to by 83% of the libraries.
- The majority of public libraries (66%) contracts signed with ISPs are not flexible in terms of allowing bandwidth to be exceeded. This could also be as a result of tight budgetary controls.
- Public libraries are generally satisfied with the quality of internet service, notwithstanding the inherent challenges.

## **7.2.6 Challenges in the provision of internet access to public libraries**

Objective five:

To identify challenges in the provision of internet access to South African public libraries.

What challenges are experienced in providing internet access to public libraries in South Africa?

Findings on the challenges in the provision of internet access to public libraries, as shown in subsection 5.4.5, established the following:

- Financial constraints. Insufficient funding poses a serious challenge to the provision of internet access to public libraries.
- Lack of ICT infrastructure. ICT infrastructure is inadequate and in some areas non-existent.
- Infrastructure in the rural areas. Some rural areas have poor road infrastructure and are generally under-developed.

- Expensive connectivity. Connecting libraries to the internet is expensive and serves as a hindrance to connecting all of them.
- Intermittent power failures. Unstable electricity supply poses a challenge.
- Limited or aged computers.

### **7.3 CONCLUSIONS OF THE STUDY**

This section discusses conclusions made in terms of the research objectives.

#### **7.3.1 Conclusion on the extent of public library development in South Africa**

The findings indicated an overwhelming acknowledgement of positive development of public libraries after 1994. The study concludes that public libraries in South Africa have developed to a great extent in the new democratic dispensation. Strides still need to be made to develop public libraries in the rural areas of the country.

#### **7.3.2 Conclusion on legislative framework**

The LIS sector is governed by a number of regulations, which include the Constitution of the Republic of South Africa (Act No. 108 of 1996), the Legal Deposit Act (Act No. 54 of 1997), the National Library of South Africa Act (Act No. 92 of 1998), the National Council for Library and Information Services Act (Act No. 6 of 2001), the South African Public Library and Information Services Bill (2010) and Library and Information Services (LIS) Transformation Charter (2014).

The study concludes that there is an enabling legislative framework in South Africa that contributes positively to the development of public libraries. However, most of the public librarians are not familiar with these regulations. A lack of policy

awareness is contributing to the lack of knowledge of policies and regulations governing the LIS sector.

### **7.3.3 Conclusion on ICT penetration**

Through this objective, the existence of computers, laptops and tablets in public libraries were considered. Furthermore, the portion of the provincial departmental budget allocated to ICT was also determined. The last leg of this objective was to determine the existence of ICT personnel dedicated to assist in the public libraries.

The study concludes that:

- Electrified public libraries have computers available for patrons' use. There is an average of five computers per library in public libraries.
- There is a provincial departmental budget specifically allocated for ICTs. The allocation is managed by the department responsible for public libraries or the provincial ICT department.
- Some libraries do not have dedicated ICT personnel to assist their patrons. This can be seen as a setback as assistance to patrons is delayed, despite municipal ICT personnel residing in the vicinity of the libraries.

### **7.3.4 Conclusion on internet service provision**

The study concludes that:

- In general, public libraries are connected to the internet. Financial constraints and lack of electricity hinder connectivity to all public libraries.
- Fixed lines (ADSL) are still predominant, especially in urban libraries. However, to extend connectivity to rural public libraries, satellite and radio link are used. Infrastructure needs to be rolled out to rural areas to avoid intermittent connectivity.

- The internet is mostly used for job applications and e-mail services. Other internet services such as internet gaming, news and studying were least used.
- Each province uses its own ISP. There are multiple ISPs in some provinces.
- The bandwidth capacity allocated to public libraries is insufficient.

### **7.3.5 Conclusion on challenges in the provision of internet access to public libraries**

The study concludes that:

- Lack of funding is an obstacle towards attaining sustainable internet access to public libraries.
- Costly bandwidth is a daunting challenge, as it makes accessing internet unaffordable.
- Lack of network infrastructure is an impediment towards rolling out internet connectivity to the needy areas.
- Expensive connectivity to the internet serves as a hindrance towards linking all public libraries to the internet.
- Intermittent power failure is an obstacle leading to persistent interrupted internet access.
- Old computers in public libraries hinder efficient and faster access to the internet.
- Rapid developments in ICT are a growing concern as they require users to keep themselves abreast of these development
- Most internet services are provided by private companies and this poses a sustainability risk.

## **7.4 RECOMMENDATIONS**

Based on the research problem articulated in the study, ways of providing internet access to public libraries in South Africa need to be reviewed to ensure sustainability. To achieve this, the weaknesses identified in this study need to be addressed to pave the way for a sustainable solution to public library internet provision. The following recommendations that address each of the study conclusions identified in 6.3 are made:

### **7.4.1 Recommendation on the extent of public library development in South Africa**

The study recommends the following:

- Public libraries' physical structures should be established in the far-flung rural areas where libraries are non-existent due to a lack of road infrastructure and other amenities. This will help deliver information services to these needy communities. Furthermore, collaborations with local tribal authorities should be fostered and may result in the identification of additional structures that can be used as libraries.
- The old buildings which have been transformed into libraries need to be re-designed to ensure that they reflect proper library buildings. A portion of the conditional grant libraries recapitalisation programme fund should be used for this purpose.

As stipulated in the Library and Information Services Transformation Charter (2014:55),

*“The government’s commitment to revitalising public libraries through the conditional grants offers them a way of redressing past imbalances and charting a path to the realisation of library services consistent with a developmental state. The conditional grants have made significant*

*differences in all the provinces, resulting in the building of new libraries, refurbishment of others, hiring of extra staff and provision of material. Additional funds released by Treasury for 2013/2014, will assist financially vulnerable municipalities to provide library services, a provincial competence.”*

#### **7.4.2 Recommendation on legislative framework**

There is sufficient legislation governing the LIS sector. However, the challenge is the awareness of such policies and regulations among LIS practitioners. The study recommends that awareness campaigns through advocacy and lobbying should be conducted to acquaint public librarians with regulations and policies in the LIS sector. Apart from advocacy and lobbying, conducting policy awareness workshops and roadshows organised by provincial departments and through the library association (LIASA) can improve the situation.

#### **7.4.3 Recommendation on ICT penetration**

The study recommends the following:

- Libraries without electricity such as modular or container libraries should be provided with electricity so that ICTs can be made available for patron use. In addition, newly built and refurbished libraries should have ample space dedicated to computers. This space should be determined by the number of registered patrons in relation to the size of the library building.
- Directors of public libraries should be involved in the ICT budgeting process of their libraries. This will avoid unilateral decision-making for ICT equipment by provincial ICT departments, which results in the procurement of unused and unnecessary ICT services.
- With regard to ICT personnel for public libraries, each public library should have a minimum of ICT personnel depending on the size of the library.



#### **7.4.4 Recommendation on internet service provision**

The study recommends the following:

- Cables for fixed lines should be laid to all public libraries, including those in the rural areas. This will ensure a stable and uninterrupted internet connectivity to libraries. Libraries will also enjoy faster connection to the internet.
- All public libraries should be connected to the internet. This will help in bridging the digital divide.
- Internet-based services should be marketed vigorously by librarians to ensure that they are also used. It has been found that job applications and e-mail services were mostly used in public libraries. Therefore, marketing these services will result in the effective use of the internet.
- There should be a dedicated internet service provider for public libraries across the country. The national Department of Communications, the Universal Service and Access Agency of South Africa (USAASA), the State Information Technology Agency (SITA), the national Department of Arts and Culture (DAC) should work collaboratively on an agency that will be dedicated to provide internet services to public libraries across South Africa. Since public libraries are used mostly by school learners (Hart 2014), the Department of Basic Education should also be included, as schools will also benefit. By so doing, ample and sufficient bandwidth would be allocated to public libraries.

#### **7.4.5 Recommendation on challenges in the provision of internet access to public libraries**

The study recommends the following:

- Equitable share should continue to be allocated to public libraries despite the existence of the conditional grant. A fundraising drive should be initiated to bolster the allocated budget.

- Government should intervene to bring down the cost of bandwidth in the country. This will greatly enhance the use of internet services.
- Telecommunications infrastructure should be made available for historically disadvantaged rural public libraries as well to enable them to access the internet.
- Stable electricity supply should be provided to public libraries. This can be done through an increased supply and building of substations in troubled areas.
- Internet provision to public libraries should not be left in the hands of private companies only. Government should take the lead in the provision of internet services. This will ensure sustainability of internet access and avoid vendor locking.

## **7.5 PROPOSED IMPLEMENTATION STRATEGIES TO COMMISSION A SUSTAINABLE INTERNET ACCESS TO PUBLIC LIBRARIES**

The last objective of the study was to formulate strategies that could be implemented in the commissioning of sustainable internet access to public libraries as outlined in chapter 1, section 1.5.2. The researcher aims to propose a set of guidelines that can aid the government in the commissioning of sustainable internet access to public libraries.

### **7.5.1 Consolidation of the legal framework**

Enabling legislative environment serves as a critical vehicle to the delivery of services in public libraries. Legislative framework that support access to internet should be consolidated and amendments that incorporate public libraries be made. Public libraries need to be legally permitted to manage access to internet on their own without diverting from the governing legislation. Furthermore, LIASA

### **7.5.2 Internet access governance**

Government, through relevant departments and agencies including, Department of Arts and Culture, Department of Communications and Department of Basic Education should identify an agency to provide internet access to public libraries across the country. This agency should standardise access and capacity in all the public libraries. Rural and disadvantaged communities will be afforded equal opportunity to access the internet. Since public libraries are most used by learners, schools will also benefit in the process.

### **7.5.3 Funding**

Funding for all public libraries' internet access should be managed centrally. This will ensure equitable distribution of resources towards internet infrastructure across all the public libraries. Included in the funding should be costs of infrastructure, bandwidth, maintenance and support. Centralising funding dedicated for internet access can prevent misuse and diversion to other societal commitments.

### **7.5.4 ICT Infrastructure**

This should include computers as well as other related ICT infrastructure. An audit of ICTs in the public libraries should be done and identified gaps be filled. While satellite connectivity has been mainly used in the remote rural public libraries of the country, rolling out fiber or fixed lines to both rural and urban public libraries should be considered. This should be commissioned in partnership with telecommunications companies in South Africa. A costed feasibility study should be undertaken and roll-out plan be mapped out. A conditional grant funding can be set aside for this purpose. Telecommunication companies should be encouraged and incentivised to invest in the project. Engaging multiple companies in this drive will be more effective than placing a burden on a single entity.

### **7.5.5 Training of librarians and personnel in public libraries**

The use of ICTs in public libraries requires constant training of librarians and other personnel. Librarians should be re-skilled in the basic ICT troubleshooting to equip them to deal with the ever-changing technological landscape and changing needs of their users. On the other hand, para-professional should also be trained to equally equip them. Training can be organised through their provincial departments and also be arranged through LIASA's Public and community Libraries Interest Group (PACLIG).

The political will, as demonstrated in the study will continue to be central to the implementation of these strategies to the latter.

## **7.6 SUGGESTIONS FOR FURTHER RESEARCH**

The internet has enhanced the functions and services provided to patrons by public libraries. Notwithstanding challenges outlined in the study, the provision of sustainable internet access to public libraries remains a daunting task. Further research areas for future researchers have been identified through the findings and are indicated as follows:

The study focused only on public libraries in all the provinces of South Africa. Therefore, an internet access model used by academic institutions needs to be investigated for its relevance and application to public libraries. Since government agencies are not well resourced, partnerships with private telecommunications companies should be investigated. Furthermore, with fiber being rolled out to more urban areas, an investigation into the rolling out of fiber to rural areas is needed. Since metropolitan cities have their own models of providing internet access to their departments, a study that focuses on these models and their possible application to public libraries needs to be undertaken. A study that looks into

incorporating ICT skills to librarians' jobs is required. This may take the form of on-the-job-training or at a tertiary level. Another study on the implications of government ICT policies and regulation for public libraries should be conducted. Bandwidth has been regarded as an expensive commodity in South Africa, resulting in an investigation into how to bring the costs down for public libraries is essential.

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**APPENDIX A**  
**INTERVIEW SCHEDULE FOR PROVINCIAL DIRECTORS OF PUBLIC LIBRARIES**

**Provision of sustainable Internet access to public libraries in South Africa**  
**Interview guide used in the study to collect data**

**SECTION A: BIOGRAPHICAL DETAILS**

1. Which Province do you represent?

--

2. What is your gender?

MALE	
FEMALE	

3. What is your designation or position?

--

4. For how many years have you been in this position?

Less than 1 year	
1-5	
6-10	
11-15	
16 years and above	

5. How many public libraries are there in your province?

--

6. Indicate the total number of personnel in your public libraries

Qualified Librarians	
Paraprofessionals	
Other (Specify)	

**SECTION B: EXTENT OF PUBLIC LIBRARY DEVELOPMENT IN SOUTH AFRICA**

7. How would you describe the development of public libraries in your province before and after 1994?

8. What would you say are the factors that have contributed to the development or lack of development of public libraries in your province?

## SECTION C: LEGISLATIVE FRAMEWORK

9. Are you aware of any legislative framework governing public libraries in South Africa?

YES	
NO	

9.1 If legislation exists, please name them

--

9.2 If NO, please indicate how public libraries are regulated in South Africa

--

10. Which regulations or policies do you think are applicable to Internet access in public libraries?

--

11. Are these regulations effective in coordinating provision of Internet access to public libraries?

YES	
NO	

11.1 If NO, what do you suggest as improvements?

--

12. How important are legislative frameworks in regulating Internet access in public libraries?

--

**SECTION D: ICT PENETRATION**

13. Indicate the total number of computers including tablets and laptops available across your public libraries

Total number	Computers (PCs)	Laptops	Tablets
Less than 50			
51-100			
101-150			
151-200			
201-250			
251 and above			

14. How many are accessible to library patrons?

Computers (PCs)	Laptops	Tablets

15. Please indicate the total provincial budget allocated to public libraries 2013-2017

Year	Budget
2013	
2014	
2015	
2016	
2017	

16. How much of the provincial budget goes into provision of ICTs in your libraries?

17. What amount from this budget goes into the provision of Internet access?

18. Do you have library staff/personnel dedicated to assist users with ICT needs?

YES	
NO	

18.1 If YES, how many?



18.2 What skills or competencies do they possess?

-----  
-----  
-----  
-----  
-----

18.3 If NO, how do you deal with ICT queries in your libraries?

--

**SECTION E: INTERNET SERVICE PROVISION**

19. Do your public libraries have Internet access?

YES	
NO	

19.1 If YES, how many are connected to the Internet?

--

19.2 If NO, what are the reasons for lack of connection?

--

20. Those with Internet access, how are they connected?

ADSL (Asymmetric Digital Subscriber Line)	
3G	
Satellite (VSAT)	
Other, specify	

21. Who is your current Internet Service Provider?

--

22. If there are multiple Internet service providers for your public libraries, please list them

-----  
-----  
-----  
-----  
-----

23. Please list the type of services these multiple service providers provide

-----  
-----  
-----  
-----  
-----

24. Do you have a service level agreement in place with your ISP/s?

YES	
NO	

25. For what duration is your ISP appointed?

1 year	
2 years	
3 years	
Other, specify	

26. Upon the expiry of the contract what does the Department do?

Renew	
Re-advertise	
Other, specify	

27. Is the current process of contracting ISPs for public libraries sustainable?

YES	
NO	

27.1 Please elaborate

--

28. What bandwidth capacity do you receive for your public libraries?

--

29. Is this sufficient for your public libraries' use?

YES	
NO	

29.1 If NO, why?

--

30. Does any of your public libraries exceed allocated monthly bandwidth capacity?

YES	
NO	
DON'T KNOW	

30.1 If YES, what remedial plans do you have in place?

--

31. Please indicate constraints/challenges you face in ensuring sustainable Internet access to public libraries

--

32. What solutions do you propose that can ensure/enhance sustainable Internet access to public libraries in your province and nationally?

--

Thank you for your time.

**APPENDIX B**

**QUESTIONNAIRE FOR HEAD LIBRARIANS OF PUBLIC LIBRARIES**

**Provision of sustainable Internet access to public libraries in South Africa**

**Questionnaire used in the study to collect data**

Instructions for completing the questionnaire

**SECTION A: BIOGRAPHIC INFORMATION**

Mark (X) the option relevant to you

Use spaces provided to write your answers to the questions

1. Which province do you represent?

Eastern Cape	
Free State	
Gauteng	
KwaZulu Natal	
Limpopo	
Mpumalanga	
Northern Cape	
North West	
Western Cape	

2. Name of your public library -----

3. Is this a rural or urban public library?

RURAL	
URBAN	
Other (specify)	

4. Indicate your Library type

Physical building	
Container	
Mobile	
Other (Specify)	

5. Indicate number of staff in your library

6. Indicate number of registered users in your library

**SECTION B: EXTENT OF PUBLIC LIBRARY DEVELOPMENT IN SOUTH AFRICA**

7. How can you describe the development of public libraries in your province before and after 1994?

-----  
-----  
-----  
-----

8. What would you say are the factors that have contributed to the development or lack of development of public libraries in your province?

-----  
-----  
-----  
-----

## SECTION C: LEGISLATIVE FRAMEWORK

9. Are you aware of any legislative framework governing public libraries in South Africa?

YES	
NO	

9.1 If legislation exists, please name them

--

9.2 If NO, please indicate how public libraries are regulated in South Africa

--

10. Which regulations or policies do you think are applicable to Internet access in public libraries?

--

11. Are these regulations effective in coordinating provision of Internet access to public libraries?

YES	
NO	

11.1 If NO, what do you suggest as improvements?

--

12. How important are legislative frameworks in regulating Internet access in public libraries?

--

**SECTION D: ICT PENETRATION**

13. Indicate the total number of computers including tablets and laptops available in your library

Total number	Computers (PCs)	Laptops	Tablets
Less than 10			
10-20			
21-30			
31-40			
41-50			
51 and above			

14. How many are accessible to library patrons?

Computers (PCs)	Laptops	Tablets



15. What challenges do you face in providing patrons with access to computers?

-----  
-----  
-----  
-----  
-----

16. Please indicate the total budget allocated to your public library between 2013-2017

Year	Budget
2013	
2014	
2015	
2016	
2017	

17. How much of this budget goes into provision of ICTs in your library?

18. What amount from this budget goes into the provision of Internet access?

19. Do you have library staff/personnel dedicated to assist users with ICT needs?

YES	
NO	

19.1 If YES, how many?

19.2 What skills or competencies do they possess?

-----  
-----  
-----  
-----  
-----

19.3 If NO, how do you deal with ICT queries in your libraries?

--

**SECTION E: INTERNET SERVICE PROVISION**

20. Does your library provide Internet access?

YES	
NO	

20.1 If YES, indicate the mode of connectivity

ADSL (Asymmetric Digital Subscriber Line)	
3G	
Microwave	
Satellite (VSAT)	
Other, specify	

20.2 If NO, what are the reasons for the lack of internet connectivity?

--

21. What challenges are you experiencing in providing internet access to patrons in your library?

--

22. In a scale of 1-3 where 1 = less usage; 2 = average; and 3 = significant usage, rate the extent of Internet use in your public library

Area	1	2	3
E-mail services			
e-Government			
Job applications			
Study			
News services			
Library Catalogue, e.g SLIMS			
Internet gaming			
Online Chats			
Other, specify			

23. Do you provide Wi-Fi access to users/patrons to connect and use their own gadgets (laptops, tablets, etc.) in the library?

YES	
NO	

24. Does your public library exceed allocated monthly bandwidth capacity?

YES	
NO	
DON'T KNOW	

24.1 If YES, what remedial plans do you have in place?

--

**SECTION F: QUALITY OF INTERNET SERVICE**

25. Please read the statements below and indicate the extent to which you agree or disagree with each statement, relating to service quality and Library's satisfaction.

On a scale of 1-3 rate the ISP service quality rendered to the Public Library.  
Indicate with X in the appropriate box

Number	Statement	Agree [3]	Neutral [2]	Disagree [1]
25.1	This ISP has modern looking equipment (e.g modems, dish etc)			
25.2	Materials associated with this ISP (such as branding) are visually appealing			
25.3	When this ISP promises to do something by a certain time, it will do so			
25.4	This ISP provides its services at the time it promises to do so.			

25.5	This ISP performs the service right the first time.			
25.6	This ISP has merchandise (stock) available when the customers want it, e.g replacement equipment			
25.7	This ISP offers its services at a speed that is convenient to customers.			
25.8	ISP personnel have the knowledge to answer customers' questions.			
25.9	The behaviour of ISP employees instils confidence in customers.			
25.10	ISP personnel give prompt service to customers.			
25.11	ISP personnel are never too busy to respond to customer's requests.			
25.12	This ISP gives customers individual attention			
25.13	ISP personnel are consistently courteous with customers.			
25.14	This ISP willingly handles returns and exchanges, eg modems, satellite dishes etc.			
25.15	Personnel of this ISP are able to handle customer complaints directly and immediately			
25.16	This ISP offers high quality equipment			
25.17	This ISP has operating hours convenient to customers.			
25.18	I am satisfied with this ISP in terms of its Internet services			

25.19	Overall, I am pleased with this ISP			
25.20	Dealing with this ISP is usually a satisfying experience			
25.21	My feeling towards this ISP can best be characterised as satisfied			
25.22	I am satisfied that this ISP does something they have promised to do			
25.23	I am satisfied that this ISP shows sincere interest in solving problems that customers encounter			
25.24	I am satisfied that employees of this ISP are able to handle customer complaints immediately.			

26. What recommendations do you suggest for improvement in the provision of sustainable internet access?

Your time in completing this questionnaire is much appreciated. Thank you.

**APPENDIX C**  
**LETTER OF INTRODUCTION**

Dear Participant

I am Lesiba Ledwaba, a Doctoral student at the University of South Africa in the Department of Information Science. The purpose of this research is to investigate how a sustainable Internet access can be provided to public libraries in South Africa.

You are kindly invited to participate in the study by completing this questionnaire. I would appreciate it if you could spare a few minutes of your valuable time to answer all questions in this questionnaire. Be rest assured that all your responses will be kept confidential and only used for the purpose of this research. In the final analysis, your opinions will contribute to the formulation of strategies that will lead to a sustainable Internet access to public libraries in South Africa.

I would be grateful if you can complete and return the completed questionnaire to me by 10 November 2017. Should you need clarity about the study, please do not hesitate to contact the student Mr Lesiba S Ledwaba at [lesiba05@yahoo.com](mailto:lesiba05@yahoo.com).

Thank you for your participation.

Yours faithfully

Lesiba S Ledwaba (Doctoral Student)

Student Number 33767122

**APPENDIX D**  
**PARTICIPANT'S CONSENT**

I hereby give consent to the researcher to use the information contained in this document for the purpose of completing his research project, and that I will not be identified and my personal results will be kept confidential.

I understood the purpose of the research and my involvement in it.  
My participation in this survey is voluntary and I understood that I could withdraw from the research at any stage.

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_



**APPENDIX E**  
**ETHICAL CLEARANCE LETTER**  
**DEPARTMENT OF INFORMATION SCIENCE RESEARCH ETHICS REVIEW**  
**COMMITTEE**



Date: 17 August 2017

Ref #:  
2017\_LSLedwaba\_33767122\_001  
Name of applicant: LS Ledwaba  
Student #:X  
Staff #:

Dear LS Ledwaba,

**Decision: Ethics Approval**

---

**Name:** Title and name of principle applicant, address, e-mail address, and phone number LS Ledwaba, Unisa Information Science, 33767122@mylife.unisa.ac.za; and 0790118432

**Proposal:** Provision of sustainable Internet access to public libraries in South Africa (the use of satellite technology in the provision of Internet access to rural libraries in South Africa).

**Qualification:** D Litt et Phil in Information Science

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Thank you for the application for research ethics clearance by the Department of Information Science Research Ethics Review Committee for the above mentioned

**For full approval:** *The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Information Science Research Ethics Review Committee on 17 August 2017.*

*The proposed research may now commence with the proviso that:*

- 1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Department of information Science Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

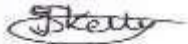
research. Final approval is granted for 4 years.

3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

*Note:*

*The reference number 2017\_LSLedwaba\_33767122\_001 should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Department of Information Science RERC.*

Kind regards,



Signature

Dr Isabel Schellnack-Kelly  
Department of Information Science  
Research Ethics Review Committee

012 429 6936