

UTILISATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN
PUBLIC LIBRARIES AT EKURHULENI METROPOLITAN MUNICIPALITY,
SOUTH AFRICA

by

TAKALANI MATAMBA MAURICE MAMAFHA

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SUPERVISOR: PROF P NGULUBE

CO-SUPERVISOR: MR S C NDWANDWE

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ABSTRACT

Public libraries, globally, are adopting the use of information and communication technologies (ICTs) in order to improve services to the users. ICTs in public libraries are enhancing services to the users by ensuring that services are available to them quickly and efficiently. ICTs in public libraries include computers and their Internet-based facilities, printers, photocopiers, laminators, faxes, telephones, televisions, compact discs, (CDs) and digital video discs (DVDs).

This study focussed on the utilisation of ICTs in public libraries at Ekurhuleni Metropolitan Municipality (EMM). The general aim of the study was to assess the utilisation of ICTs at EMM public libraries by the users. Both qualitative and quantitative research approaches through a survey research method were deployed. The study targeted all public libraries at Ekurhuleni and within the libraries; library users and control librarians (librarians in charge of libraries at Ekurhuleni) were targeted. Control librarians participated in the study as key informants. The researcher needed to find out if they would corroborate what users said. There is a total of 43 public libraries at Ekurhuleni and eight were included in this study. These eight libraries were selected through stratified sampling. Out of 24033 registered users at Ekurhuleni libraries, 332 were randomly selected to take part in the study. All eight control librarians of participating libraries were included in the study. The total response rate for the targeted library users was 51% (170).

The findings of this study indicate that although ICTs in EMM libraries are highly utilised, staff attitudes, cost of ICTs services, users' lack of ICTs knowledge and skills, slowness of ICTs and power failure, make it difficult for users to maximise the full benefits offered by ICTs. The study recommended that the cost of ICTs services be reduced, customer care workshops and ICTs training be prioritised for staff, structured ICTs training programmes be developed for library users, users' access time to Internet be extended, subscription to online databases be prioritised, Internet bandwidth be increased, uninterrupted power supply be installed in libraries and that positions be created for librarians specialising on ICTs.

KEY TERMS: Information and Communication Technologies, Public libraries, Control Librarians, library services, library users, Ekurhuleni Metropolitan Municipality.

DEDICATION

This study is dedicated to my mother Mrs. Maria Mamafha, who against all odds made it possible for me to be who I am today and my late father Mr. William Mamafha for his continued support and presence in my life (till his last days), my lovely wife Mrs. Nkhensane Glory Mamafha and my handsome son Thendo Austin Mamafha, who have been the pillars of my strength throughout this study, My sisters, Mrs. Rosina Malaba, Ms. Flora Mudau (both late) and Mrs. Violet Mhangani, My brothers, Mr. David Mamafha (late) Mr. Thomas Mamafha and Mr. Ezekiel Mamafha. All these people are so special to me that I would not be who and where I am today if it were not for them, and this thesis is dedicated to them.

“Ndi ri kha ri farane nga u rali vha Ha-Dimbanyika Ramulifho vha ila mukwiivhai”

DIMBANYIKA RAMULIFHO

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PSALM 23

*The Lord is my Shepherd; I shall not want.
He leads me through the valley of the shadow of death,
For His name sake.*

DECLARATION

I declare that *Utilisation of Information and Communication Technologies in Public Libraries at Ekurhuleni Metropolitan Municipality, 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.

Signed electronically

Signature

Maurice Mamafha

08 February 2014

Date:

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LIST OF ABBREVIATIONS AND ACRONYMS

ACRL:	Association of College and Research Libraries
AIRS:	Access to Information and Reading Services
ALA:	American Library Association
BLCP:	Birmingham Libraries Computerisation Project
BPS	Bits Per Second
CBO:	Community-based Organisation
CDI:	Compact Disc Interactive
CV:	Curriculum Vitae
DAT:	Digital Audio Tapes
EMM:	Ekurhuleni Metropolitan Municipality
ETD:	Electronic Thesis and Dissertation
FEMA:	Federal Emergency Management Agency
ICTs:	Information and Communication Technologies
IL:	Information Literacy
ILS:	Integrated Library System
INDEST:	Indian Digital Library of Engineering Science and Technology
INFLIBNET:	Information and Library Network
ISAP:	Index to South African Periodicals
JAWS:	Job Access With Speech
KNLS:	Kenya National Library Services
LIS:	Libraries and Information Services
MARC:	Machine-readable Catalogue
NEPAD:	New Partnership for Africa Development
NGO:	Non- governmental Organisation
NLSA:	National Library of South Africa
OPAC:	Online Public Access Catalogue
OCLS:	Orange County Library System
PCs:	Personal Computers
RLRDP:	Rural Libraries Resources Development Project
SA:	South Africa

SCANUL-ECS:	Standing Committee of African National and University Libraries – East, Central and Southern Africa
SDCs:	Service Delivery Centres
SDI:	Selective Dissemination of Information
UK:	United Kingdom
UNESCO:	United Nations Educational, Scientific and Cultural Organisation
UNISA:	University of South Africa
UPS:	Uninterrupted Power Supply
US:	United States
USA:	United States of America
VIPs:	Visually Impaired Persons
WWW:	World Wide Web

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CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

Constable (2007:1) notes that the 21st century has been characterised by the dominant role of information, which is increasingly available electronically. The reliance on information and communication technologies (ICTs) is dramatically changing the manner in which services are being rendered to the users of public libraries all over the world. For instance, there has been a dramatic change in the manner in which traditional public libraries services, such as circulation, interlibrary loan, reference and information services, are rendered since the expansion of library technologies (Chisenga 2004). ICTs implementation by public libraries has also led to the development of Internet and its World Wide Web (WWW) services. This, according to the Chisenga (2004), enables users to, among other things, apply for jobs online, read newspapers online and access online resources such as dissertations, to enhance their personal growth and advance their professional careers. The presence of computers and printers in public libraries allow users to type letters, assignments and Curriculum Vitae (CVs) and print them either freely or at much reasonable prices (Chauhan 2004). Most public libraries around the world have already adopted ICTs with the intention to automate their services. For instance, studies by Chaplin (2002) and Bertot et al. (2006) found that public libraries in the United Kingdom (UK) and United States (US) adopted the technologies long before other countries of the world, although those in the US were found to be far ahead of those in the UK in implementing library technologies (Gardner 2002:16).

However, according to the Electronic Information for Libraries (2010), also known as EIFL, the introduction and use of the new technology has taken place at a snail's pace and is still at its infancy stage in most African public libraries. Chisenga (2004) and Kirsch (n.d.) share this view. The slow adoption of ICTs by African public libraries is owing to the challenges such as low level of telecommunication infrastructures as well as lack of support from those in authorities in most African governments (EIFL 2010). Ncoyini (2006:1) adds that the lack of developed infrastructure for ICTs is widening the gap between Africa and the developed countries of the world. This has resulted in Africa adopting a renewal framework, the New

Partnership for Africa's Development (NEPAD), which identifies ICTs as central in the struggle to reduce poverty on the continent. ICTs have the potential to provide hope to overcome barriers of social and geographical isolation, increase access to information and education, and enable the poor to participate in decision making processes (Chaplin 2002).

Despite the above-mentioned challenges, some of the public libraries in South Africa, such as those in eThekweni Municipality, are among the first libraries on the African continent to have adopted ICTs to improve services to the users in the late 1970s, which is over a decade later than the US and UK libraries (Kirsch n.d.). In view of the above, this study intended to assess the utilisation of ICTs facilities in Ekurhuleni libraries by libraries users.

1.1.1 Conceptual setting

According to the United Nations educational, scientific and cultural organisation (UNESCO 2000), the rise in the adoption and use of ICTs in the current information and knowledge era is resulting in the changing roles of public libraries. Traditionally, public libraries were famous for their roles as custodians of books and other printed media. However, ICTs use is changing the image of public libraries for the better, as they are not only helping libraries to be relevant to the present and shaping their future, but also helping with the automation of services. By so doing, libraries are able to retain their status of being the most reliable and first-stop information access points (Eve & Brophy 2000:3).

The adoption of user-based ICTs facilities by public libraries around the globe have reached an advanced stage to such an extent that countries such those in the UK are actively advocating the use of ICTs in their libraries (The People's Network Online 2002). Public libraries in England, for instance, are seen as major vehicles for providing affordable or preferably free access to ICTs at local levels (The People's Network Online 2002). This has given rise to the introduction of public access personal computer (PCs), which have been implemented in most of the libraries in England and Wales (The People's Network Online 2002). Libraries in England, for instance, have spent a vast amount of money to ensure that their libraries acquire the best ICTs facilities for the benefit of their users (Chaplin 2002). According to Chaplin (2002), the main reason for investing in ICTs facilities is that they are considered as strategic tools through which challenges of social exclusions and inclusions

could be addressed. Due to their nature of being one-stop information access points, public libraries have become ideal points where the public easily accesses information, and ICTs have become powerful tools through which such information could be timely, effectively and efficiently accessed (Berndtson 2002).

Africa experienced the first taste of ICTs in its libraries in the late 1970s and early 1980s, with the introduction of microcomputers (Kirsch n.d.; Chisenga: 2004). By almost the same time in the US and some countries in Northern Europe, computerised services had reached a considerable level of maturity in relation to the then technology such as the orange county library system (OCLS), which provided online services to hundreds of libraries (Giordano: 2002). The development from paper-based online catalogue was one of the steps towards digitised convergence (Berndtson: 2002). The automation of Italian libraries was still rare and almost at the experimental stage during the same period above (Giordano 2002).

The introduction of ICTs has helped libraries to carry out a variety of office operations such as word processing, accounting (using spreadsheets), database management, presentations and electronic mail (Chisenga 2004). These developments in the use of ICTs have resulted in the globalisation of information and knowledge resources. For instance, bibliographic database, full text document and digital library collection are always available to users of public libraries, due to such developments (Chisenga 2004). Meanwhile, the presence and influence of Internet and its World Wide Web (WWW) services, as it became pervasive during the 1990s, had a critical impact on the logistics of service delivery for many public libraries. This, according to Fitzgerald and Savage (2004: 24) has resulted in the significant shift in how information is created, stored, accessed and delivered.

By the 1990s, the use of ICTs in libraries had slowly shifted from technology for staff to facilities designed for public use in the form of personal computers to access Internet and undertake word processing (Spacey, Goulding & Murray 2003:62). By that time ICTs had become not just ordinary tools, but powerful tools enabling library and information services to be provided in a more effective, efficient and systematic way (Olorunsola 1997). Although they are not an end in themselves, these technologies have become powerful instruments, which increase productivity, generate economic growth, and create jobs and employability.

They also improve the quality of a people's life. Through their efficiency, they promote dialogue among people, nations and civilizations (Olorunsola 1997).

In South Africa, apart from public libraries in eThekweni Municipality that are known to be among the first to automate their services in the late 1970s and 1980s, libraries in Ekurhuleni Metropolitan Municipality (EMM) such as Tembisa and Tembisa-West have been using library technology such as photocopiers, printers, DVD players and computers with Internet for the past few years to improve services to the users (Motumi 2012). The adoption of ICTs in South African public libraries is in line with the government's strategy of transforming public service delivery, as outlined in the Batho Pele (People First) white paper, which is all about giving customer service to the users of government services (South African Government Information 2007). These principles are:

Consultation: According to this principle, users of services should be consulted on the services provided to them and this can be done through conducting customer surveys, interviews with individual users, consultation with groups, and holding meetings with consumer representative bodies, non-governmental organisations (NGOs) and community-based organisations (CBOs).

Service standards: This principle emphasised the need for government departments to have precise, measurable standards against which performance should be judged with citizens being involved in the development of such service standards.

Increasing access: Access to government services should be a priority. This is based on the fact that services that are inaccessible serve no purpose in improving the lives of people. Therefore, this principle put emphasis on the need of government services to become accessible to all citizens in order to address the inequality problem. One way in which the government addresses this issue is through initiatives such as Gateway, Multipurpose Community Centres and Call Centres. These make it easier for citizens to access information and services, which empowers them, and create value for money.

Ensuring courtesy: This involves having empathy towards citizens and treating them with respect. It also involves communication of services, products, information and problems, which may hinder or derail the efficient and effective delivery of services in accordance to

the set standards. If this principle is correctly applied, it may change citizens' perceptions and attitudes towards public servants who are perceived to be lazy and unhelpful.

Providing information: Information is key for decision-making and problem solving. Therefore, information about services should be at the service delivery points. Meanwhile, proper arrangement should be made for users who are far from the point of delivery to get information. Managers and employees should regularly endeavour to make information about the organisation, and all other service delivery related matters available to fellow staff members.

Openness and transparency: This implies that citizens should be well acquainted with the way how the three spheres of government function, namely: national, provincial and local government. They should be knowledgeable about the services available for them and who is in charge of the services. This will encourage the public to make use of the services available and also provide suggestions in terms of how services could be improved. If this principle is properly applied, the public would also be able to make government employees accountable and responsible by raising queries with them.

Redress: It is probable that services may fall below the promised standards due to a variety of issues such as lack of resources and staff incapacity. This principle, therefore, emphasises the need to quickly and accurately recognise when services are falling below the set standards, and to have procedure in place to address the situation. This should be done at both individual transactional levels with the public and at the organisational level, in relation to the entire service delivery programme. Public servants are, therefore, encouraged to be receptive so that they could welcome complaints and use them to improve services as well as to deal with complaints so that weaknesses can be remedied quickly for the good of the citizens.

Value for money: Many improvements that members of the public would like to see do not necessarily require additional resources and can sometimes even reduce costs. Members of the public should be given satisfactory explanation to an enquiry, as failure to do that may inconvenience them and cost time to remedy.

One of the most crucial roles of public libraries is to provide services of high standards or quality to all citizens as well as ensuring that access to resources is extended to all in need, at a reasonable price and time to meet people's individual needs. Therefore, by virtue of their

speed and the capacity at which they process information, public libraries ICTs facilities ensures that people get the required information and resources within a reasonable time to meet people’s daily needs. By so doing, the principles of Batho Pele as mentioned above are achieved. It is important to note that in line with the above-mentioned government strategy, all public servants are compelled by law to practice the Batho Pele principles. Municipalities, as the government’s strategy to delivering services that are closer to communities, are not exempted (South African Government Information 2007).

Ekurhuleni Metropolitan Municipality libraries, which are the subject of this study, are among the libraries in South Africa that have adopted ICTs in order to improve the rendering of services to the users (Motumi 2012). EMM libraries have gone a long way in ensuring that services to the users are improved. They have done this by automating services such as circulation, interlibrary loan and reference services, and creating the opportunity for the development of new services such as the Internet, word processing facilities, users’ free email accounts and the ability to access jobs online.

1.1.2 Contextual setting

Ekurhuleni Metropolitan Municipality is located in the Gauteng Province of South Africa. The municipality is divided into three regions: the Northern, the Eastern, and the Southern region. In total, the municipality has 43 public libraries, which are categorised into large, medium and small (Maneli 2008). Of the 43 libraries, 11 belong to the Northern region, 16 belong to the Eastern and the remaining 16 belong to the Southern region. Categorization of libraries is based on the sizes of the libraries. The following table shows an alphabetically arranged list of all public libraries in Ekurhuleni, their sizes and location:

Table 1.1: Ekurhuleni libraries and their sizes and locations (Maneli 2008)

Northern Libraries	Region	Eastern region libraries	Southern region libraries
Bedfordview (Small)		Actonville (Small)	Alberton (Medium)
Bonaero Park (Small)		Alra Park (Small)	Boksburg (Large)
Birchleigh (Small)		Backerton (Small)	Brackenhurst (Medium)

Birchleigh North (Small)	Benoni (Large)	Dinwiddie (Small)
Edenvale (Large)	Brakpan (Medium)	Edenpark (Small)
Kempton Park (Large)	Daveyton (Small)	Elsburg (Small)
Olifantsfontein (Small)	Duduza (Small)	Germiston (Medium)
Phomolong (Small)	Dunotter (Small)	Isaac Mokoena (Small)
Primrose (Small)	Gelukkersdal (Small)	Thokoza (Small)
Tembisa (Small)	HP Mokoka (Small)	Katlehong (Small)
Tembisa West (Small)	Jerry Moloi (Small)	Leondale (Small)
	Kwathema (Medium)	Palmridge (Small)
	Nigel (Medium)	Reigerpark (Small)
	Springs (Large)	Spruitview (Small)
	Tsakane (Small)	Vosloorus (Small)
	Wattville (Small)	Zonkezizwe (Small)

The municipality was established in the year 2000, after an amalgamation of different and previous Service Delivery Centres (SDCs) to form Ekurhuleni (Lee 2001). The centres were Alberton, Benoni, Boksburg, Brakpan, Edenvale, Germiston, Kempton Park, Nigel and Springs. Prior to 2004, libraries in each of the SDCs were using different library management systems such as Erudite, Pals and Book plus to render services to the public. In the year 2004, all EMM libraries adopted the Erudite as the sole integrated library management system to manage their function, and this has been the case until the municipality migrated to the Sirsi Dynix (Unicorn library management system) in 2008. Apart from using the integrated library management system to render services such as circulation, reference and interlibrary loans, EMM libraries have also been providing ICTs related services to the users such as access to Internet, typing, printing, photocopying, faxing and other related services. The 441 Internet kiosks were introduced in 2006 to all EMM libraries with the intention to ensure that users are able to do their own independent searches, send emails, conduct research and communicate with their peers in other parts of the world.

However, despite the above positive aspects of ICTs developments in EMM libraries, questions are starting to be raised as to whether the investment in such facilities is justifiable or not, considering the costs associated with service and maintenance of such facilities. The study emerged as a result of the researcher wanting to know whether such costly facilities are

being used and valued by those who are supposed to be using them or not, in order to support the demand for libraries' continued investment in ICTs facilities.

1.2 Statement of the problem

Since Ekurhuleni municipality was established in December 2000, public libraries in Ekurhuleni have adopted the use of ICTs in order to improve services to the users, as already mentioned in section 1.1 above. However, there is, to date, a lack of convincing evidence on the utilisation of such facilities by users of EMM public libraries. In other words, the extent of utilisation of such facilities in EMM libraries is still largely unknown. The lack of evidence on the utilisation of ICTs facilities in public libraries seems to be a global challenge, as it was also pointed out by Eve & Brophy (2000) in a similar study in the UK. Chisenga (2004) also pointed out that most literature on the use of ICTs within the context of African libraries mostly describes the situation as it applies to academic and special libraries, with little focus on the use of ICTs in public libraries. It is against this background that the researcher in this study intended to find out if such facilities in EMM libraries are in fact being utilised by the users. If yes, to what extent are they utilised, and if not what are the reasons for non-utilisation of such facilities, and what ought to be done to ensure that such facilities are utilised?

1.3 Aim and objectives of the study

The general aim of the study was to assess the utilisation of ICTs in EMM public libraries by the users to ensure that proper and adequate facilities are acquired in case the facilities are found to be effectively utilised. The specific objectives were as follows:

Table 1.2: Illustration of relationships between research objectives, research questions and possible sources of data.

Research objectives	Research question	Research method	Data collection method	Population
To find out the types of ICTs available in Ekurhuleni libraries	What types of ICTs are available in Ekurhuleni libraries?	Survey	Interviews	Library staff

To determine the main uses of ICTs in Ekurhuleni libraries	What are the main uses of ICTs in Ekurhuleni libraries?	Survey	Questionnaires	Library users
To investigate the attitudes of users towards ICTs in Ekurhuleni libraries	What is the attitude of Ekurhuleni library users towards ICTs in the libraries?	Survey	Questionnaires	Library users
To examine users' ICTs preferences in Ekurhuleni libraries	What ICTs in Ekurhuleni libraries do users prefer and why?	Survey	Questionnaires	Library users
To determine the accessibility of ICTs facilities to users of Ekurhuleni libraries	How accessible are ICTs facilities to users of Ekurhuleni libraries?	Survey	Questionnaire	Library users
To determine library users' knowledge and skills in relation to ICTs use in Ekurhuleni libraries	Do users of Ekurhuleni libraries have knowledge and skills of how to use ICTs in the libraries?	Survey	Questionnaires	Library users
To ascertain the availability of ICTs training programmes in Ekurhuleni libraries to train users on the use of ICTs	Are there programmes in Ekurhuleni libraries that train users on how to use ICTs?	Survey	Questionnaires Interviews	Library users Library staff
To establish the challenges experienced by library users in utilising ICTs in Ekurhuleni Libraries.	What are the challenges experienced by library users in using ICTs in Ekurhuleni libraries, and how can they be alleviated?	Survey	Questionnaires Interviews	Library users Library staff

1.4 Justification of the study

Public libraries in Ekurhuleni have been investing more on ICTs facilities for the past few years, in an effort to meet the ever-changing needs of their users (Motumi 2012). On that note, more studies are needed to investigate and evaluate the effectiveness and utilisation of such facilities by EMM library users. While library technologies should make a major difference in the lives of people served by libraries, history dictates that due to difficulties already identified in section 1.1, such facilities are generally under-utilised by users. This study is, therefore, necessary to determine whether such facilities are utilised by Ekurhuleni library users or not. The recommendations of this study will go a long way in ensuring that measures are put in place to get facilities utilised in case they are found to be under-utilised by users of the libraries.

1.5 Significance of the study

This study is significant in that it will provide insight or evidence on the use of ICTs in public libraries at Ekurhuleni and contribute knowledge in the library and information services profession on the value of ICTs in public libraries. The main significance of this study is that given the backdrop of resource cutting, which has been a feature of public library funding in Ekurhuleni libraries over the past few years, the study is crucial to prove the value of ICTs in public libraries. It is hoped that the findings of the study will also persuade the library authorities to continue investing in public library ICTs facilities for the benefit of the users.

1.6 Delimitations and scope of the study

The study was confined to registered users of EMM library and information services. The term “registered users” in this case refers to general members of the public who are registered as users of Ekurhuleni library and information services. Due to the limited scope and time of the dissertation, potential and non-users of libraries were excluded from the study, since getting responses from them would have been a challenge. The study focussed mainly on the following aspects: (i) the types of ICTs available in EMM libraries, (ii) use of ICTs in EMM libraries, (iii) attitudes of users towards ICTs in EMM libraries, (iv) library users’ ICTs preferences in EMM libraries, (v) accessibility of ICTs to users of EMM libraries, (vi) users skills and knowledge on ICTs use in libraries, (vii) availability of users’ ICTs training

programmes in EMM libraries, and (viii) challenges experienced by users in utilising ICTs in EMM libraries.

1.7 Definition of terms

According to Leedy and Ormrod (2005:55), defining terminology is important because we cannot evaluate the research or determine whether the research has carried out what was proposed in the problem statement without knowing what a term means. Defining terminology in research is crucial to dispel confusion and for better understanding, both for those who are new to the subject and those who are familiar with the subject (Yusof & Chell 1998:96). The following key terms and concepts are explained in this section to provide the context in which they are used and these are, (i) Information and communication technologies, (ii) electronic information resources, (iii) public library, (iv) library services and (v) under-utilisation.

1.7.1 Information and communication technologies

According to Unwin (2009), ICTs cover Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services, and other related information and communication activities. Chaplin (2002) defines ICTs as a set of technological tools used to store, manage, create, communicate and disseminate information, and encompasses all forms of electronic communication in both digital and analogue form. It covers a whole range of hardwares and software associated with computers, and reflects the increased use of networks and Internet in particular.

In the context of this study ICTs covers both the information technology and communication technology, and refers to all forms of technology applied to processing, storing and transmitting information in electronic form. The physical equipment used for this purpose include computers and Internet facilities, hardware, software, fax machines, photocopying machines, printers and other related facilities. It also includes facilities for the blind such as braille, talking books and others, which are available in public libraries today.

1.7.2 Electronic information resources

Olson (1999) defines electronic information resources as documents in the library that are available in an electronic format, and which require special equipment and skills to be accessed. These documents have the following advantages over printed books and journals: They can be searched by any combination of keywords so that a query can match every individual and specific needs, information retrieved can be downloaded, manipulated and used in other documents. In addition, resources can be updated daily or weekly with no delays for printing and for delivery. In the context of this study, electronic information resources refers to all library resources that are available electronically such as books, newspapers and magazines, among other things, needed by users to get information to meet their daily needs.

1.7.3 Public library

A public library is a library, which is accessible by the public, is largely generally financed from public sources (such as tax money), and may be operated by civil servants (Worldbook Encyclopaedia 2006: 240). They are distinct from research libraries, school libraries or special libraries based on the fact that their mandate is to serve the public's information needs generally (rather than serve a particular school, institution or research population), as well as offering materials for general entertainment and leisure purpose (Worldbook Encyclopaedia 2006: 240). The United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines a Public library as the local centre of information, making all kinds of knowledge and information readily available to its users (UNESCO 2000).

Public libraries are lending libraries, as they allow users to take books and other materials off the premises temporarily; and also have non-circulating reference collection. Their main focus is on popular materials such as popular fiction and movies, as well as educational and non-fiction materials of interest to the general public. They also offer computer and Internet access to the public at a lesser or no cost (Totterdell 1978: 144). In the context of this study the term public libraries refers to all libraries that perform the same functions above, including all the 43 libraries in Ekurhuleni that are used by the general public and provide general services such as circulation, reference, interlibrary loans, information services and Internet services almost free of charge.

1.7.4 Library services

According to Shillinglaw and Thomas (1998: 277), the term "library services" refers to different services rendered by libraries to members of the public. These include children's services, lending services, services for young adults, services for special groups such as the physically challenged. In the context of this study library services refers to services such as circulation, reference, interlibrary loans and other library related services for both adults and youth. It also includes newly developed services such as the Internet and its WWW services, as well as braille services offered to blind people in EMM libraries.

1.7.5 Under-utilisation

Sekgwelea (2007: 22) defines under-utilisation, as a failure to achieve the set target, being non-effective, and the effect of falling below the established optimum level. For the purpose of this study, under-utilisation refers to less utilisation of ICTs facilities by users of public libraries in general.

1.8 Research methodology

Research methodology entails the method to be followed in conducting the study. Ngulube (2005) observes that the researcher needs to describe the method used in conducting the study and this include providing information on aspects such as population, sampling techniques and data collection method adopted in the study. According to Ngulube (2005), one cannot talk of research if those aspects are not clearly defined. Meanwhile, Nachmias and Nachmias (1996: 201) and Ngulube (2005) define a population as a group of people or objects under study.

For the purpose of this study, a stratified sampling technique was used to sample the population of libraries. This sampling method was made possible by grouping libraries in Ekurhuleni into three different size categories (strata), namely: Small, Medium and Large. A simple random sampling technique was then applied within each category (stratum) to get the total sample libraries required for the study (See section 3.4.1 and 3.4.2 for detailed information on sampling procedure and size). Meanwhile, a simple random sampling

technique was also used to get a total number of respondents (library users) from each sample libraries to participate in the study. The study also targeted control librarians (librarians in charge of libraries in Ekurhuleni) as they were working in the libraries selected for the study (See section 3.4.1 and 3.4.2 on sampling procedure and size). In order to get a total number of respondents (sample size) from each of the participating libraries, the researcher was guided by Ngulube (2005) and Neuman (2000), who recommend that a sample size calculator, with a 95% confidence level and a ± 3 margins of error be used to get the sample size. Therefore, the library sample for this study was eight, while that of library users was 332, (See section 3.4.2 for detailed information on sampling size). Meanwhile, all eight control librarians of the libraries participating in the study were included in the study as key informants. The sample of users was drawn from the eight EMM libraries selected for the study, and out of 332 users (100%), the researcher sampled 41 (4%) Actonville library users, 42 (9%) Brakpan library users, 42 (17%) Benoni library users, 42 (26%) Boksburg library users, 42 (25%) Edenvale library users, 42 (12%) Germiston library users, 41(4%) Reigerpark library users and 40 (3%) Tembisa West library users.

The researcher used both questionnaires and interviews to collect data from library users and control librarians who are critical role players in EMM public library services. Data was analysed quantitatively and qualitatively based on the fact that the study was both quantitative and qualitative in nature. In quantitative analysis, data was analysed through charts and tables. The use of charts and tables in analysing quantitative data is supported by Neuman (2000: 313), who argues that one should consider using charts, graphs and tables in analysing quantitative data. Qualitative data, mainly from staff interviews, was analysed through explanations and descriptions as guided by Neuman (2000: 417).

1.9 Ethical consideration

It is important to include an ethical statement in the study if it includes people as research subjects (Bak 2004: 28). Ethics in research are there to ensure that individuals are not subjected to any harm as a result of the study being conducted (Constable 2007). According to Ngulube (2005), committing plagiarism, and falsification and fabrication of data also constitute unethical conduct. Meanwhile, Mavodza (2010) reasoned that in conducting Library and Information Science (LIS) research, emphasis on ethical standards is focussed on

maintaining the confidentiality of participants. According to the Unisa Policy on Research Ethics (2007), the following ethical issues must be adhered to when conducting research. These include: acknowledgement of copyrights sources and sponsors where applicable, adherence to rules of confidentiality and privacy as they relate to individuals, groups participating and contributing to the purpose or aspects of the study. Moreover, one must avoid undertaking research in secret, and that there must always be a sense of accountability and responsibility and respect for human participants when conducting research (Unisa Policy on Research Ethics (2007)).

For the purpose of this study, the researcher adhered to most of the research ethics or guidelines above by, (i) Getting permission from authorities to conduct the study with participants at research sites, (ii) adhering to rules of confidentiality and privacy as they related to individuals or groups participating or contributing to the purpose or aspect of the study, (iii) not putting participants at risk, and (iv) acknowledging copyright sources and sponsors where applicable (see detailed information in section 3.7)

1.10 Structure of the study

This thesis is organised into five chapters: Chapter One introduces the research thereby giving the general background of the study, statement of the problem, research questions, objectives of the study, significance of the study, definition of key concepts, research methodology, delimitations and scope of the study. Chapter Two focuses on the review of literature relevant to the study. It opens with the background information on why literature review is necessary. It then covers aspects such as: (i) A brief historical overview of ICTs trend in public libraries, (ii) Roles of public libraries in communities, (iii) Types of ICTs available in public libraries, (iv) Use of ICTs in public libraries, (iii) Benefits of ICTs to users of public libraries, (iv) Accessibility and barriers to ICTs take-up, as well as (v) Challenges experienced by library users in utilising ICTs in public libraries. Chapter Three describes the research methodology and design used in conducting the study. In Chapter Four data is analysed, presented and interpreted and results discussed. Chapter Five presents the summary of major findings, conclusions and recommendations of the study.

1.11 Summary

Chapter One has provided a background on ICTs adoption and use in public libraries in general. In this chapter, the researcher has also explained the problem statement, research questions, aims and objectives, delimitations and significance of the study. Both conceptual and contextual frameworks have been discussed in this chapter and a brief outline of the sequence of chapters has been outlined. The next chapter presents the review of literature.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter One introduced the research problem relating to the utilisation of ICTs in Ekurhuleni public libraries. This chapter reviews literature relevant to the study. It sought to give a deeper understanding of what ICTs facilities are used in public libraries, by whom are such facilities used as well as the reasons for the usage of such facilities. In this chapter, various literature related to the study is reviewed in order to put the study in its proper context, by identifying and analysing various issues in the literature that are relevant to the study. The chapter starts by providing clarity on why it is necessary to conduct literature review. However the main focus of the review is on the following: (i) A brief historical overview of ICTs trend in public libraries, (ii) roles of public libraries in communities, (iii) types of ICTs available in public libraries (iv) use of ICTs in public libraries, (v) benefits of ICTs to users of public libraries, (vi) accessibility of and barriers to ICTs take-up in public libraries, (vii) availability of users' ICTs training programmes in public libraries, (viii) users' ICTs knowledge and skills, (ix) users' attitudes towards public libraries ICTs facilities in libraries, (x) non-use of ICTs facilities in libraries, as well as (xi) the challenges experienced by users in using ICTs in public libraries.

2.1.1 Reasons for conducting literature review

Mavodza (2010: 30) observed that it is very difficult to do a research without any reference to other scholars. Although the need for doing research may seem obvious because of a desire to increase operational efficiency, doing some reading on the topic also helps clarify matters (Mavodza 2010: 30). A literature review, according to Kumar (2011), is aimed at supporting one's argument, as well as summarising and synthesising the ideas that others have already put forward. The discovery of gaps, which may not have been covered by earlier research, helps refine and shape the direction of the investigation (Goddard & Melville 2001: 18). These gaps, according to Maree (2007: 26), may either be methodological, conceptual or contextual weaknesses identified by the researcher in previous studies. Leedy and Ormrod (2005: 64) are of the view that the review of literature allows one to look again at what other

researchers have done in areas that are similar, though not necessarily identical to one's own area of investigation.

According to Sekgwelea (2007: 37), the review of literature helps to avoid duplication as well as help the aspiring researcher to be well informed about the scope and area of research. The author further stresses that the knowledge that previous research has been done, and literature is available on a topic, makes it important to read those texts. Goddard and Melville (2001:19) observe that literature to be reviewed can be anything from a set of documents that originate from government, scholarly articles, to books and institutional documents. Meanwhile Kumar (2011: 31) observes that the review of literature allows the researcher to be acquainted with the available knowledge in his/her area of interest that will inform the study. Mavodza (2010: 30) argues that one does not have to agree or disagree with the source and the conclusions reached by other authors when conducting literature review. According to Mavodza (2010: 30), what is important is how precisely the literature in use supports the subject of research. Mavodza (2010: 30) also observed that researchers must consider the time period the literature review covers. It is against this background that the most recent literature was considered for this study, informed by the conviction that the field of ICTs is fast revolving.

Kumar (2011: 32) identifies the following as key functions of literature review in research:

- It provides a theoretical background to one's study.
- It helps one to establish the links between what one is proposing to examine and what has already been studied.
- It enables one to show how one's findings have contributed to the existing body of knowledge in one's profession.
- It helps one to integrate one's research findings into the existing body of knowledge.

In reviewing literature for this study, it was necessary to evaluate the sources and examine those that were most applicable to ICTs applications in public libraries. Although some of the dated literature were also considered for this study, due to their relevance to the study, attempts were made to ensure that a high percentage of sources used were not older than six years. Dated literature used was relevant to this study as it provided an overview background

and ICTs development trends in public libraries over the years since their inceptions. This is necessary in order to get a deeper understanding of how far public libraries have evolved over the past decades in relation to ICTs adoption and use. However, the critical factor considered when selecting literature for review was the relevance of sources used to the study, as only those dealing with ICTs in libraries (not other fields or sectors) were reviewed. The research and views of scholars like Bertot et al. (2006), Bertot, McClure and Jaeger (2007), Bertot et al. (2008), Spacey, Goulding, and Murray (2003), Bill and Melinda Gates Foundation (2012), Eve and Brophy (2000), Fitzgerald and Savage (2000), Chaplin (2002), Chisenga (2004), Chisenga (2006), Sekgwelea (2007), Emmanuel and Sife (2008), Becker et al. (2010), Mavodza (2010), Akparobore (2011), Davies (2012) and Maswabi et al. (2011), who contributed some knowledge on ICTs and their utilisations in libraries, were significant in understanding the topic.

2.2 A brief historical overview of information and communication technologies trend in public libraries

Developments in the use of ICTs in libraries all over the world have resulted in many technological changes taking place in public libraries over the years. In developed countries such as those in the US and UK, library automation activities started during the 1950s and 1960s respectively (Mutula 2004). During that period, library systems were developed locally on mainframe computers of parent organisations using local programming language expertise. Meanwhile, database producers such as Chemical Abstracts, National Library of Medicine and Institute of Scientific Information developed extensive computerisation programmes that led to online information retrieval system (Mutula 2004). According to Mutula (2004), national library of medicine in Bethesda in the United States of America (USA) is known to have used computers as early as 1964 in photocomposition or computer typesetting in the production of index medicus. This was followed by the use of computer applications to specialist forms of information processing, such as chemical structure handling (Mutula 2004).

Mutula (2004) further observes that in the late 1960s, the advent of library cooperation schemes in the UK and US became a viable means through which costs associated with automation among several libraries were shared. The Orange County Library System (OCLS)

in the US and Birmingham libraries computerisation project (BLCP) in Britain became the most prominent example of such cooperatives (Mutula 2004). The library cooperative schemes, according to Mutula (2004), provided automated services such as facilitating access to shared union catalogue, circulation services and cataloguing data among others. Tedd (1997), identified three phases that were involved in the evolvement of library automation: (i) The first phase was experimental during the 1960s, and was largely characterised by in-house developed systems, (ii) the second phase was in the 1970s when the off the shelf turnkey system were introduced. During that period, library cooperative schemes consolidated their position in the automated library market, (iii) The third phase started in the 1980s which saw the surfacing of the off the shelf integrated systems, offering circulation, acquisition, serial control, cataloguing and online public access with all modules sharing a common database.

Since the 1990s, the use of ICTs in public libraries has gone through four stages of development, corresponding to the major reason for automation. These, according to Chisenga (2004), included:

Improving the efficiency of internal operations: ensuring that internal library functions and activities are run most effectively and efficiently in rendering services to the users of libraries.

Provision of access to the local library resources: enabling internal library resources such as books and other media to be accessible within a reasonable time to library users.

Provision of access to the resources outside the library: ensuring that resources such as books and other media are accessible to users without having to visit libraries.

Inter-operability of the information system: ensuring that various library functions and activities are performed inter-changeably to find the required information sources. For instance, one could easily and quickly find an online information source by using either author, subject or title search inter-changeably.

2.2.1 Information and communication technologies and library administration

The 1990s saw a major trend starting to emerge in the area of ICTs and libraries. The developments included the integrations of library systems, adherence to standards,

interlibrary loans modules, development of metadata as well as development of digital collection and digital libraries (Kumari 2002: 3). These developments, according to Chisenga (2004), resulted in the availability of library automation systems, which include the full set of features required for basic library automation. Most vendors supplying stand-alone systems, as opposed to integrated systems, started to work towards either adding other library modules to the systems, or finding themselves out of the market (Chisenga 2004).

Siriwongworawat (2003) argued that public libraries in Thailand had computerised some of their basic library functions, such as cataloguing and indexing lists of new books in the 1980s. Since then, integrated library management systems had been in use in the libraries. Meanwhile, some of the libraries added further functions to their library management system such as, reserve bookings, database of community resources, homebound services, media bookings, access to journal citations and indexes thereafter (Siriwongworawat 2003). These developments, according to Chisenga (2004), led to vendors: (i) providing systems that followed standards such as machine-readable catalogue (MARC) record format for bibliographic data exchange, (ii) including an option for a 'Z39.50 server and use of the transmission control (the communication protocol for computers connected to the Internet), and to (iii) include support for multiple language scripts. Chisenga (2004) also observed that developments in ICTs use in public libraries have also led to development of interlibrary loan modules. He further argued that automation of interlibrary loan functions has resulted in library vendors making efforts towards integrating modules that can handle interlibrary loan activities into their systems.

The growth of web-based services led to the development of metadata (Chisenga 2004). Meanwhile, the growth in the use of web-based resources and the fact that information sources published on the web are generally not well organised to facilitate retrieval, stimulated efforts to develop metadata schemes for the description and cataloguing of web-based resources and other types of electronic resources (Chisenga 2004). As a result of ICTs developments in public libraries, there has been a shift from libraries offering "information about information" i.e. access to bibliographic database, towards access to full-text documents. In the meantime, libraries started to digitise and store collections and make them available in the full-text via the Internet, to ensure that digital collections were available for 24 hours a day and 7 days a week (Chisenga 2004).

2.2.2 Information and communication technologies based user services

Chisenga (2004) reveals that the use of ICTs in public libraries in the 1990s slowly shifted from technology for staff use to facilities designed for public use in the form of personal computers (PCs), to access the Internet and undertake word processing. Libraries started providing various ICTs-based services to their users, such as the provision of web access to Online Public Access Catalogues (OPACs), electronic document delivery, networked information resources, delivery of information to users' desktop, online instructions and online readers advisory services (Chisenga: 2004).

Fitzgerald and Savage (2004) argued that the past decades had seen library automation undergoing a transformation that reflects changing definitions of library service in general and access to resources in particular. Meanwhile, the introduction of global networking such as the Internet and new media technologies has made information more accessible to users. The developments in ICTs in libraries also heralded the arrival of web-based online public access to catalogue interfaces, as opposed to the telnet-based access system. Due to these developments, OPAC users started finding it easier to learn to use the web-browser (Fitzgerald & Savage 2000). Developments of ICTs in public libraries ensured that public libraries were able to start implementing electronic networks, to deliver copies of journal articles and other documents in digital format to users' desktop. For instance, some libraries in Thailand started implementing relevant networks to enable links to the Internet, so that users could be able to search digital databases of books, thesis, journal articles and so on (Siriwongworawat 2003: 238). This was done to facilitate more efficient information services for library users, and resulted in anyone who had access to the Internet being able to use the resources without difficulties (Siriwongworawat 2003: 38).

Developments of ICTs-based services in public libraries in the UK and other developed countries of the world resulted in public librarians and other information specialists investigating and implementing systems that could deliver customised information to users' desktop computer environment, irrespective of where the persons were geographically located. This resulted in people being able to get services needed without having to physically visit libraries or information centre (Chisenga 2004).

Most recently, developments in ICTs use in South African public libraries have resulted in the introduction of multi-user 441 public Internet kiosks (Kirsch 2008). These facilities enable the public to, among other things, type resumes, conduct business, communicate with friends and other cultures as well as find job opportunities (Kirsch 2008). Ekurhuleni Metropolitan Municipality libraries, in Gauteng, for instance, are some of public libraries that have introduced the multi-user 441 public Internet kiosks, with the first rollout having taken place in the year 2006. The system had Linux (Mandrake Linux) operating system loaded. The system is now providing Internet access to the users as well as allowing users to type and print documents (Kirsch 2008).

2.3 Roles and responsibilities of public libraries in communities

Since their establishment, public libraries had always played a critical role both in making their users information literate and bridging the digital divide that exists at local, regional or national levels (Aqili & Moghaddam 2009). By providing digitised full-text content, free access to computers and Internet, public libraries have become national portals of digital information resources. This, in turn has resulted in the changed roles of librarians whose roles have shifted from that of information locators (custodian role) to that of information evaluators and instructors in the use and evaluation of information sources (Aqili & Moghaddam 2009).

Aqili and Moghaddam (2009) also argued that public libraries have become the heart of communities, impartial trusted centres of information and advice. They are also regarded as safe havens for people of all ages and abilities and are at the centre of education and lifelong learning (Aqili & Moghaddam 2009). Drake (n.d.) identified the following as some of the key roles that public libraries play in communities:

Increase overall literacy: Increasing overall literacy is one of the key responsibilities of public libraries. This is achieved through allowing citizens easy and free access to library resources such as books, newspapers, magazines and other related library material.

Foster children's literacy: Children's literacy skills have to be developed at an early age so that they can become independent readers when they reach adulthood. It is for this reason that public libraries' other role is to promote children's literacy skills so that they could be able to

read and write at later stages in life and be able to face the world around them with much confidence. This role is achieved through the rendering of programmes designed to teach them to read, and some of the programmes are: summer reading, mentoring and puppet or live shows. These ensure that children are used to books which increase their basic understanding of language prior to entering formal schooling system.

Excite children about learning: For children to learn effectively, the environment should be welcoming to them, while the resources used should be stimulating. Public libraries offer such an environment, opportunities and resources, as they encourage children to read books of their own choice, in addition to books they have read from school. This helps to stimulate their reading and learning interest in general.

Provide free resources: Books and electronic resources are very expensive to buy, especially in recent times as the cost of living is too high. Electronic resources such as computers and their Internet facilities are provided free of charge in most public libraries while printing and photocopying services are available at reasonable prices. This is important in difficult economic times, when many people cannot afford to pay for such services elsewhere apart from libraries.

Help underprivileged people: The fact that public libraries are available at reasonable prices or free of charge means that poor people, also known as socially excluded people, are able to get services that bring smiles into their faces despite their social status. Public libraries ensure that people of all socio-economic classes have access to books, news and records. Many public libraries also have programmes that help illiterate adults to learn to read, as reading and writing are critical skills that help poor and uneducated people to find employment.

Encourage lifelong learning: One of the critical responsibilities of public libraries is to encourage lifelong learning. They ensure that people continue to learn for the rest of their lives, so that they become enriched. The free resources that public libraries offer ensure that people are easily able to find new information and learn about new topics.

Therefore, as enablers, ICTs are critical tools or means through which the above public libraries functions are effectively and efficiently actualised for the public. For instance, by offering computers and ICTs literacy classes to benefit both young and old poor people living in disadvantaged areas, public libraries ensure that people's literacy skills are enhanced. Meanwhile, the availability of free library resources such as computers and Internet-based

facilities to the public ensures that access to electronic information is done quickly, effectively and efficiently. In the meantime, through the use of ICTs facilities such as television and videos, public libraries are able to render children's library programmes such as storytelling in a way that traditional story tellers have never done before i.e. effectively and efficiently and in a way that stimulates children's interest. On the other hand, computerisation of traditional public libraries functions, such as circulation, reference, current awareness services, have improved services dramatically, and people no longer have to wait in long queues to get services needed, as ICTs services are quicker.

Krolak (2005: 7) and Drake (n.d.) concur that public libraries are no longer passive keepers and preservers of books; rather, they have evolved to become more involved in information and lifelong learning, with their emphasis being on providing service, identifying user needs and communicating solutions. Modern public libraries have become un-folders of the community's learning potential by providing information on community issues, such as health, employment, continuing education and local history. This equitable access to information is essential to enable educated and informed citizens to participate in a democratic global community (Krolak 2005: 7).

Davis (1989) observed that public libraries play a strategic role of bridging the information gap, thereby providing free access to information and communication technologies, particularly the Internet worldwide. They are inclusive in that they build bridges between individuals at the local level and the global level of knowledge. In industrialised countries where modern information and communication technologies are currently the most attractive library services, public libraries have become the most trusted access points for ICTs services, and also have an educational role of assisting users in finding information online (Krolak 2005: 8).

Public libraries, increasingly in co-operation with other community organisations, offer a varying amount of activities including author readings, creative writing classes, introductions to information and communication technologies and the Internet, reading groups (including adult), exhibitions, summer reading programs, study support, discussion groups and art classes such as drama, poetry and songs (Laurel County Public Library n.d.).

It is also one of the crucial roles of public libraries to provide adult literacy classes. They have ideally easy access to all the resources needed to run an adult literacy programme, including printed and audio books, magazines for all reading levels, videos and newspapers, and most of them provide space for students and tutors (Akparobore 2011). They are usually centrally located and accessible by public transport, while at the same time are friendly and hospitable places, ideally with service oriented opening hours and approachable staff. While adults, with low literacy levels, often have bad memories of schools, and negative attitudes towards formal education, public libraries (through non-reading activities, such as lectures, movies or discussion groups) play a critical role in facilitating their first step back into learning (Krolak 2005). Apart from teaching literacy, the library's role is also to focus on its collection development based on the needs of its neo-literate users. This means a strong focus is needed on the acquisition of relevant and interesting reading material for adults, with low vocabulary or literacy skills. If this material is for whatever reasons not available, the library can develop its own community newspaper, ask the course participants to write their own biography or publish a collection of students' writings. These are valuable educational tools, which encourage students to write, give them an audience for their products, enable them to gain confidence in their writing abilities and encourage organisational skills (Scov 2004)).

Public libraries, according to Krolak (2005) also have a role to play in overcoming the problem of gender differences in reading acquisition, by maintaining collections of materials that appeal to males and females. Many language classes at school and many adult literacy classes focus on fiction texts, which tend to be less appealing to boys and young men. By providing interesting reading material in the areas of sports, science or politics, the library counteract the problem that a large percentage of males are perceived to be slow or non-readers. In Botswana, village reading rooms were established to support and extend library services to literacy graduates in rural areas (Maswabi et al. 2011). According to these authors, as these village rooms were mainly established in primary schools, they are today mostly used by pupils and teachers and provide a useful and cost-effective means of giving access to educational materials in areas where no traditional library service operates.

Krolak (2005) pointed out that the focus of the past decade has been on using libraries to break the cycle of family illiteracy. This was achieved by providing materials and services to all age groups and reading levels. By using the library with their children, children become

motivated to read, and this has a long effect on their lifelong learning (Celano & Neuman 2012). In Slovenia, for instance, 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.

2.4 Types of information and communication technologies available in public libraries

Different types of ICTs facilities are available in public libraries for use by members of the public. Most of the researchers, such as Emojorho (2011) , Chauhan (2004) had focussed mainly on the different types of ICTs available in public libraries to perform both administrative and managerial functions by staff. Interestingly, current literature reveals that the recent availability of information electronically in libraries has led to different types of ICTs facilities being used by members of the public (Constable 2007). Harding (2002), Eve and Brophy (2000) and Chaplin (2002) identified computers, Internet facilities, CD-ROMS, audio-cassettes, video-cassettes, photocopiers, faxes and printers as some of the most common types of ICTs available in public libraries for members of the public in the UK. Meanwhile, Bertot et al. (2008), Becker et al. (2010) and Oliver (2007) have identified the same types of ICTs as some of the facilities available in public libraries in the US.

In Africa, although public libraries adopted the technology long after other developed countries of the world, as observed by (System librarian n.d.), the types of ICTs available in public libraries for members of the public include computers, computers with Internet, CD-ROMs, audiocassettes, video cassettes, photocopies, faxes and printers. The situation is the same in Bangladesh and Pakistan libraries, according to Islam and Islam (2007) and Mahmood (2008) respectively, as computers and Internet facilities were found to be available in libraries for members of the public.

Mayhill (2002) found that public libraries in Gateshead, in the UK, had different types of ICTs intended for the visually impaired users, who also need current information in order to address their information needs. Since this group of users need special facilities that would cater for their needs, public libraries are now having ICTs facilities for them, such as,

compact-disc interactive (CDI), and digital audio tapes (DAT). The Library of Congress (2012) found that ICTs facilities such as Braille, talking books, playback equipment, and reader advisory services were some of the types of ICTs available for use by visually impaired users in public libraries in Georgia, USA. In Africa, Ng'ang'a (2003) found that Braille and playback equipment were some of the ICTs available in Kenya libraries for the same user group cited above

2.5 Use of information and communication technologies in public libraries

It was the objective of this study to determine the main use of ICTs facilities available in public libraries. The focus here was on finding answers to questions such as, (i) what ICTs facilities are in use in public libraries, (ii) who is using the facilities, (iii) how often are facilities used, (iv) what are the reasons for use of the facilities, and if they are not used (v) what are the reasons for non-use of the facilities. Although literature is increasingly becoming available on the use of ICTs in public libraries around the globe, not much has changed in the context of Africa (South Africa in particular), as little research is available on the subjects. Most studies conducted on the subject such as that of Okiy (2005) and Nkanu and Okon (2010) focussed on ICTs as they were used in academic libraries than public libraries. It is only scholars, such as Mutula (2004), Chisenga (2004), Chisenga (2006), Maswabi et al. (2011) and Moyo (2009), who looked at the situation in an African context. Other scholars, like, Jay and Weber (2005), Bertot, McClure and Jaeger (2007) and Bertot et al. (2008) looked at the situation in the context of developed countries of the world, namely, UK and US respectively. It is against this background that the researcher found it necessary to investigate this aspect fully. In order to put ICTs usage trends in public libraries around the globe into perspective, it is necessary to identify what is generally believed to be the main uses of ICTs. For instance, Chauhan (2004) claimed that, computers, which are among the mostly used ICTs facilities in public libraries, are used to provide access to the following:

Online public access catalogue: Public libraries have been using library catalogues as a tool for displaying materials available in the library. The availability of computers in libraries ensures that a user is quickly made aware of whether the material needed is available in the library or not. This has an advantage of saving a user's time, as they do not have to browse through the shelves to determine whether the materials are available or not. The availability of online public access catalogue ensures that the user can know about the status of a book

without visiting the library, especially if the user has access to Internet from home. The most important advantage of OPAC is that searching of library catalogue is done conveniently and quickly, which saves a user's time in searching for the library item.

Internet: Through ICTs, particularly the Internet, users of public libraries are able to access information from anywhere in the world free from any communication and information access barriers. The availability of Internet in public libraries enables users to get up-to date research reports and knowledge globally. Some people use it for job searching, study purpose, and looking for current information. Meanwhile, emails are used for communication and chatting with friends from other parts of the world.

Web based resources: These are sources that are now available electronically or in digital form. The following are some of the types of library materials available electronically or in digital form in public libraries today: journals, books, patents, newspapers, standards, photographs, pictures, motion pictures or music. The advantage of these resources is that one can access them from anywhere in the world provided the user has access to the Internet. They can be searched conveniently, quickly, and one is able to search directly on the text and is able to link to further reading material.

E-Journals: Electronic Journals can be accessed via Internet from any web enabled PC. Depending on the type of subscription, one or more users can access the service simultaneously, directly from an independent web enabled PC or in a local area network, through a proxy server (IP addresses based access). Electronic journals also offer benefit of full text searching and downloading of articles. Many publishers of electronic journals offer their journals through consortia of libraries at much lower rates. For instance, the Indian Digital Library of Engineering, Science and Technology (INDEST), and Information and Library Network (INFLIBNET) are two such consortia operating in India. Access to articles in electronic journals can also be made through aggregator services, which offer searchable databases of contents of e-journals from several publishers, and links to journal site for full text. Emerald and J-Gate are some examples of e-journal aggregator services.

E-Books: E-Book can be described as a text analogous to a book that is in digital form to be displayed on a computer screen. E-books can be read just like a paper book, using dedicated E-Book reader such as Gemstar, eBook or on a computer screen after downloading it. There are also some newer technologies developing such as electronic paper (which is much like paper, except that the text can be changed), and talking books in MP3 format. E-book offer

advantages like portability, 24 hours access, text search, annotation, linking, and multimedia and self-publishing possibilities.

Electronic Theses and Dissertations (ETD): Dissertations and theses produced at universities are important sources of information and knowledge for further research. A large number of universities have converted their theses and dissertation collection into digital libraries and have made it available on Internet for global access. A number of universities have also implemented Electronic Theses and Dissertation programmes, where researchers submit theses in electronic format. Users of public libraries are able to get access to such recourses through library Internet facilities.

Patents: Patents are among the resources that are becoming easily accessible to public library users as a result of ICTs. Many patent issuing authorities now have made their complete full text patent records online. By using public libraries Internet facilities, users are able to access such documents.

Course Material: A large number of web based courseware and teaching aids are being developed to facilitate flexible open learning by many universities and commercial organizations. Many academic institutions have adopted such course material for their curricula. Therefore public libraries can provide access to course material to the learners and teacher and thus contribute to open learning. This can be done by providing links to the courseware sites through subject gateways or provide local access after downloading the material.

Libraries in Ekurhuleni provide access to some of the above ICTs-based resources, and this include, (i) Internet, which people use to search for jobs online, read online newspapers, and find up-to-date information to meet their daily needs, (ii) Online public access catalogue, which allow users to find out if resources needed are available in the library collections, (iii) electronic books in CD-ROM format and (iv) electronic journals, which allows people to have access to journal articles published locally and internationally, although one has to register with his/her respective institution (particularly university students who need access password) in order to get access to those e-resources such as Emerald, ProQuest, SABINET, SA publications, and EBSCO among others. Libraries users are also able to create their Internet emails accounts via Google (known as Gmail) and others, and can also network with others through facebook social media.

2.5.1 Use of information and communication technologies at the United Kingdom public libraries.

Studies conducted in the United Kingdom (UK) revealed that a range of ICTs facilities were in use in UK public libraries by users. Studies by Clark (2010), Jay and Weber (2005) Bill and Melinda Gates Foundation (2012), Spacey, Goulding, and Murray (2003), Chaplin (2002), Gardner (2002), Towers (2001), Eve and Brophy (2000) and Harding (2000) among others, reveal that public libraries in the UK have adopted the use of user-based ICTs facilities long before other countries of the world. Studies conducted by the above authors also found that people of different age groups, educational levels, and gender used public libraries ICTs facilities in libraries for a range of reasons, including satisfying their informational, recreational and educational needs.

The study by Clark (2010) found that more than 10 million adults in the UK had never used an Internet, and those who lived in disadvantaged communities were most affected by this digital divide. Therefore, public libraries, in those poorest communities, were found to be playing a critical role of bridging the digital divide by making ICTs, such as computers and Internet, accessible to users free of charge. Studies by Chaplin (2002) and Harding (2000) also found that public libraries ICTs facilities were used by government authorities in the UK as strategic tools to address the challenges of social exclusions. Social exclusion refers to a situation whereby a division is created between those who have access to the technology and those who do not. ICTs in UK public libraries have been used to break down the barriers between the information 'haves' and 'have knots', encouraging the sharing of information across local, regional, national and trans-national boundaries, and thus acting as a catalyst for economic and political renewal (Chaplin 2002).

Studies by Spacey, Goulding, and Murray (2003) revealed that public libraries ICTs facilities, such as computers with Internet, have been used for a range of reasons. For instance, they have been used in support of users' careers, learning, leisure and social-related activities. This view is also supported by Jay and Weber (2005), who found that ICTs were used in UK public libraries for a wide range of reasons. These include normal computer typing, using word processing facilities, as well as Internet and web-based searches for electronic information, in order to address users' particular needs.

Literature also reveals that libraries such as Brandon, Dulwich, John Harvard, Newington and Peckham in Southwark Council, had ICTs facilities such as computers with wireless Internet, Word processing facilities and others, that were used to support educational and community information resources to benefit users (Southwark Council 2011). With over 150 computer facilities, such services were made accessible to library users irrespective of whether they were registered as members of the libraries or not, and wireless Internet were some of the available services. However, as it is the case with most public libraries around the globe, facilities could not be used to access material of a pornographic, violent, racially or religiously offensive nature or other undesirable or inappropriate material as judged by Southwark libraries. Such facilities could also not be used to take part in illegal activities or view or distribute illegal materials. Southwark libraries also had computers meant for visually challenged people, such as Braille, talking books and others (Southwark Council 2011).

Meanwhile, the study by Harding (2000) found that leisure activities seemed to be the major motive behind ICTs use by children in UK public libraries, whereas older children mainly used ICTs for educational purposes. In the same study, Harding (2000) also found that ICTs in UK public libraries were generally used for, among others, doing research, study, leisure and job searching in the Internet. Similarly, Eve and Brophy (2000) also found that ICTs in UK public libraries were used to support a range of activities, which include formal study, job seeking, and building and maintaining social networks using the Internet. These scholars also found that ICTs use in libraries was influenced by factors such as age and occupation of users, as younger and working peoples were found to be the most users of public libraries ICTs facilities.

Chaplin (2002) found that although ICTs in UK public libraries were introduced as strategic tools to help people in deprived neighbourhoods to overcome major obstacles they faced in their lives, the use of public libraries ICTs facilities by such people remained at its lowest level, as only a small proportion of libraries users in those areas used ICTs. The same study also found that public library ICTs facilities, such as computers, were hardly used by those without any other access to facilities elsewhere; instead they were mainly used by those people who already had knowledge of computers, and who had access to the facilities elsewhere, namely, at home, work and cybercafés and friends/relatives' homes. This confirmed that although access to the public access PC and Internet may be free in the

libraries, it is very likely that its take-up may still be relatively low, despite the cost factor, which is regarded as the common barrier to ICT take-up.

The above findings suggest that it is those who are already using computers either at home or elsewhere (at work, for example) who are most likely to use ICTs facilities in the libraries. Furthermore, the above study also found that employed people were most likely to use ICTs in the libraries, compared to the unemployed who did not have work as a source of ICTs access, and miss out on training opportunities available to employees. This, according to Chaplin (2002), shows that it is those people who are employed who are more likely to use the library computing facilities, compared to those who are unemployed. The low take-up of ICT facilities by the unemployed were attributed to factors such as lack of ability to use ICTs and an absence of training opportunities through work or the general use of ICTs at work. This may in turn cause fear of looking stupid or breaking the facilities. Chaplin (2002) also found that ICTs facilities in the UK libraries were not attracting a substantial proportion of older library users, whose main use of the library was still books. In fact, the results of his study found that a high proportion of older adults' main use of the library was book-related, whereas only a small proportion of users used the library's ICTs facilities because they considered ICTs to be facilities for young people.

The study by Towers (2001) also revealed that mobile library services had been preferred by public libraries in the UK as a means through which ICTs services were made accessible to people living in disadvantaged areas, where most services were not available. In other words, ICTs provision through mobile libraries was seen as a means through which the challenge of social exclusion could be addressed (Towers 2001). The same author also discovered that older people who were above 65 years category were most likely not to use ICTs facilities in mobile libraries, compared to those under 16s and 36-40 years category who were most likely to use the facilities.

The latest advances in twitter, as a means of communication among individuals and organisations, has put libraries in the spotlight, as public libraries have to adapt and adopt the new communication channel if they are to meet the ever-changing needs of the communities. The Caldicot library in the Monmouthshire council in the UK, for example, is one of the libraries found to be using ICTs such as computers to tweet about wonderful books, and

inform the public about what goes on in the library, as well as what is going on in the community in general (Monmouthshire libraries 2011).

2.5.2 Use of information and communication technologies at the United States public libraries

Information and communication technologies' usage trends in the United States (US) public libraries are similar to that of other developed countries of the world, such as those in the UK, in many respects. Studies conducted by American Library Association (ALA 2009), Becker et al. (2010), Oliver (2007) and Bertot, McClure and Jaeger (2007), for instance, shows that like in the UK, ICTs use in US public libraries was prevalent. Studies conducted by the above researchers found that, ICTs facilities, such as computers and their wireless networks, were used by majority of public library users in the United States of America (USA) and Canada, irrespective of their ages, races, or level of education, to address their social, recreational and educational needs among others things. A study conducted by Becker et al. (2010) in USA, for instance, found that one third of Americans aged 14 and older used ICTs facilities in public libraries, such as computers and wireless networks to access the Internet. This study also found that people of all ages, income, races, and levels of education visited public libraries for Internet access, irrespective of whether they had a connection at home or not. The study by Becker et al. (2010) also found that computers in public libraries were used because: people had no access to the facilities elsewhere, needed faster Internet speed, wanted technical help from a librarian, competed for access to a computer at home, or simply wanted to work somewhere more peaceful and inviting than a home or crowded office. This study also found that teenagers were the most active users of the facilities compared to other age groups. Becker et al. (2010) also found that public library computers were also used to connect with families and friends, plan family routines, manage bank accounts, apply for permits, start local clubs, and read daily newspapers, among other things, by library users.

Becker et al. (2010) also found that in extreme conditions people turned to public library Internet terminals when they had nowhere else to go. For instance, in the wake of natural disasters, such as hurricane Katrina, public libraries were often some of the last remaining places where people could search online for housing and federal emergency management agency (FEMA) aid. Public libraries ICTs facilities such as computers were also used by library patrons to help families and friends with health matters, matters relating to education

and learning opportunities, as well as helping their friends, families and co-workers and even strangers with a wide range of problems (Becker et al. 2010).

The study by Becker et al. (2010) also found that information and communication technologies, such as computers, were also used to access government services, which were readily accessible online. For instance, the study found that more than 26 million people in the USA used public library computers to get government legal information or to access government services, while 58% of respondents in the study were found to have used ICTs to download a governmental form, such as social security paperwork or tax forms. Meanwhile, others were found to have used computers to submit government forms. In the same study by Becker et al. (2010) most people were found to have used library computers for a variety of educational activities, such as doing their homework, applying to graduate programmes, completing online courses and tests, and even applying for financial aid.

The study by Bertot, McClure and Jaeger (2007) found that half of the nation's 14 to 18-year-olds used library computers for study purpose, usually to do school homework. The findings of this study revealed that, overall; people used library computers to perform both life-changing and routine tasks. In other words, regardless of income, patrons relied on library computers to take fundamental steps in their lives. For example, they used computers to find work, apply to college, secure government benefits, and learn about critical medical treatments.

Meanwhile, the study by Bertot et al. (2008) found that among the most common ICTs-related services used in USA were homework resources, audio content, and digital reference/virtual reference. This study also found that, services ranging from video-conferencing to digitised special collections were also provided in some few libraries, while Internet-related services, such as, education resources and databases for students, services for job seekers, access to government information, resources and databases for adults/continuing education students were also rendered. This study also found that, in addition to the Internet-based services made possible through ICTs, computer facilities in public libraries were also used to provide training to patrons on a variety of topics involving Internet use (Bertot et al. 2008).

In another study, Carlton (2009) and Van Sant (2009) found that computers have been increasingly used at public libraries in USA to access the Internet during the economic downturn that affected the USA and the rest of the world. The study findings of these two authors revealed that during such hard times when people were experiencing recession, people had been using computers to search for employment and social services through the Internet.

The study by Bertot et al. (2006) found that public libraries ICTs facilities were also used by some of the government agencies in USA as tools for citizens to access e-government information, and therefore making public libraries unofficial access points to e-government services. The use of e-government allowed patrons to, among others, sign up for Medicare, submitting taxes, applying for citizenship, claiming water rights, registering children for school, and countless others. This study also found that through Internet, clients of government agencies were able to apply for benefits, set appointments, or file complaints in public libraries. A recent study conducted by Shank (2012) in USA has shown an increase in the use of ICTs facilities, such as the Internet, to access electronic books.

Meanwhile, the study commissioned by Canada's Community Access Programme (2004) found that public libraries in Canada, used library ICTs to address isolation barrier to certain disadvantaged groups of Canadians. These were the aboriginal Canadians, immigrants, older Canadians, Francophones, low income Canadians, residents of rural areas who were less likely to use ICTs in libraries. Through public library ICTs, these groups of citizens were included back into the mainstream, where they used ICTS for reasons such as job searching and assessing government services and information (Canada's Community Access Program 2004).

In Saskatchewan, which is one of the provinces in Canada, the study by Oliver (2007) found that people used ICTs facilities for the following activities: (i) using email to send and receive messages, (ii) searching the Internet for information, (iii) playing games, (iv) using spreadsheet programmes, (v) searching and reading magazines and newspapers online, (vi) using computers to access library catalogue as well as to place a book on hold over the Internet. Other activities, included doing banking online (pay bills online, transfer funds, look up account balances, etc.), use the Internet to get information on provincial and or federal government programs or services, have a "real-time" conversation online in a chat room, log on to a newsgroup and purchase goods or services online (Oliver 2007).

2.5.3 Use of information and communication technologies at African public libraries

Literature on ICTs use in African public libraries (South Africa in particular) reveals that due to challenges such as lack of infrastructure, lack or shortage of computers, lack of funds and absence of ICTs skills among users in general, most African countries have yet to maximise the full benefits offered by public ICTs facilities (Kirsch n.d.). Meanwhile, the study by Chisenga (2004) found that public libraries in Sub-Saharan Africa, such as those in Ghana, Tanzania and Malawi, have yet to take full advantage of the advancing technologies to benefit users of libraries, due to challenges mentioned above. This, according to Chisenga (2004), denies public libraries in those countries the opportunity to play a role in serving as universal access points to global information in their communities. In the same study, Chisenga (2004) also found that ICTs use in most African libraries such as Botswana, Ghana, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda and Zambia was limited to automation of services, and this involved circulation, acquisitions, cataloguing, and access to OPAC. Other activities included using ICTs for accounting, community information and book selections, but there is little focus on user-based ICTs facilities in the literature. Nevertheless, current developments have seen most countries in Africa, such as South Africa, Botswana, Nigeria, Ghana and Kenya, starting to implement user-based ICTs facilities for the benefit of their users, although this is still mostly in the context of academic libraries than public libraries (Kirsch n.d.; Maswabi et al. 2011; Emojorho 2010; EIFL 2010).

According to Were (n.d.), Nkanu and Okon (2010) and Kirsch (n.d.), countries such as Egypt, South Africa and Nigeria are among the countries in Africa that have adopted user-based modern information and communication technologies, such as computers with Internet. Were (n.d.) also argued that by the year 2005, Africa had a total of 12.9 million Internet users. In the same year, almost 50% of Internet users in Africa were in South Africa (27.2%) and Egypt (20.9%). Africa's users made only 1.6% of world's ICTs users, and due to their accessibility, public libraries have been preferred and used as the main points of ICTs access in most African countries (Were n.d.).

A study by Nkanu and Okon (2010) reveals that different types of ICTs facilities were in use in Nigerian public libraries for a variety of reasons. The most common types of ICTs used, were computers and Internet facilities, which were used to bridge the digital divide that existed among communities. The same study also found that other ICTs-based facilities such

as compact discs (CDs), CD-ROMs, digital video discs (DVDs) were also in use in Nigerian libraries by members of the public, in order to meet their informational, recreational and educational needs.

In Kenya, Chisenga (2004) reveals that Kenya National Library Services (KNLS) opened a cyber café at the headquarters in 1999. The cybercafé had computers, which were connected to the Internet. According to Chisenga (2004), ICTs based services provided to the community through KNLS included Web browsing; e-mail services via Yahoo! or Hotmail; access to CD-ROMs; word-processing services; access to online periodicals, books and databases. The cyber café attracted a lot of users, and the board planned to expand the service both at the headquarters and to other branch libraries in the network, to meet the ever-growing user demands, as the people become aware of the power of the Internet as a source of information. Both the study by Chisenga (2004) and EIFL (2010) found that, Kenya National Library Services had continued to play a crucial role in providing access to ICTs facilities to the communities. This was done through the training of staff, users and students on the use of ICTs; assisting other government departments and institutions in establishing ICTs departments and by enhancing library automation through the development and installation of KNLIS library software in other libraries (Chisenga 2004; EIFL 2010).

Meanwhile, the study by Jemo (2008) in Kenya also found that KNLS offered computers and Internet based services to rural communities such as Kilifi, Nyeri and Eldoret, and these enabled readers to navigate through resources on the network. The findings of this study also revealed that adult professionals such as teachers and lawyers were among the users of KNLS ICTs facilities. These were also assisted and equipped with skills to search for information for research in continuing education. In the meantime, Chisenga (2006) found that Internet and web-based technologies in African public libraries, particularly those in Eastern, Central and Southern Africa, were being used to access, among others:

Web-based Online Public Access Catalogues: Internet and web-based technologies ensures that library catalogues are easily accessible online by anyone trying to find what information resources are available in a particular library irrespective of where the person is geographically located. Kenya National Library Services (KNLS) and National Library of

South Africa (NLSA) are amongst libraries that allow their users to access their catalogues online using these technologies irrespective of users' geographical location.

Networked digital based information resources: ICTs facilities are used to allow users to access networked digital information resources such as online databases, electronic scholarly journals, encyclopaedias, public government information and others provided by various publishers or suppliers. In addition to providing access to external networked digital information resources, some libraries were found to be using ICTs to provide access to local databases either on the Intranet or Internet. For instance, in South Africa, visitors to the website of the National Library of South Africa (NLSA) can access and search the index to South African Periodicals (ISAP), where they can have a list of locally completed theses and dissertations.

Electronic based interlibrary loan and document delivery services: Through ICTs-based interlibrary loan systems, copies of journal articles and other documents in digital format are delivered through electronic networks to user's desktop. For instance, in the Standing Committee of African National and University Libraries - East, Central and Southern Africa (SCANUL-ECS) region, the only existing formal interlibrary lending network that has adopted the use of ICTs facilities (Ariel) in its operations among its members is found in South Africa.

Online user education: Online programmes are implemented that educate users on how to use the library. Among others, these programmes include online or CD-ROM based tutorials on searching online resources and virtual tour of library collections.

Readers' advisory and reference services: Public libraries users use ICTs to access web-based version of reader's advisory services and reference services. This comprises informing users through the web about new materials that have been added to the library collection, selective dissemination of information (SDI) announcements, and facilities for readers to interact with reference staff (Virtual Reference Desk) and others.

Providing facilities for accessing information. Users of public libraries are using computers, Internet and other ICTs- based facilities to access information of different kinds at little or no cost.

In Zimbabwe, a study by Moyo (2009) found that in an effort to ensure that rural Zimbabweans were not socially excluded from benefitting from ICTs, a rural ICTs project run by rural libraries organisation was developed. This project used solar power and donkeys to take ICTs facilities, such as PCs, to rural Zimbabwe. The study by Moyo (2009) found that the project called Zimbabwe's Rural Libraries Resources Development Project (RLRDP), which had been taking mini libraries to rural areas on specially converted donkey carts for several years, was also taking PCs to communities on the carts. In this study Moyo (2009) also found that, the RLRDP project, which was founded in January 1990, and had 300 static school and community libraries, had 15 donkey-drawn mobile libraries and 120 book delivery bicycles. With a special focus on children, these vehicles were used to take books to remote and underserved areas. Nowadays, the organization has equipped some of its donkey carts with solar panels to power PCs, taking computing and internet access to previously socially excluded rural areas (Moyo 2009). The first donkey- drawn mobile library was introduced by RLRDP in 1995 and started operating in Nkayi district, 160 km north of Bulawayo. The mobile carts were made from light, but solid steel to allow for easy pulling by two or four donkeys. These carts operated in Nkayi, Bubi and Tsholotsho districts in Matabeleland North province (Moyo 2009). Each mobile cart visited three to four primary schools, reaching about 1 500 children. The carrying capacity of each cart was about 1 200 books. Two of the mobile carts were later equipped with solar panels to allow use of audio-visual equipment that included TV, computer and radio (Moyo 2009).

The adoption and use of ICTs in Botswana public libraries came at a time when there was a general misconception among adult library users that public libraries ICTs facilities were meant for young library users (Maswabi et al. 2011). The Sesigo library ICTs project was started in Botswana, with an aim of contributing to the achievement of the national goal of an informed and educated nation by 2016 (Maswabi et al. 2011). The study by Maswabi et al. (2011) found that, this project had enabled access to a range of ICTs facilities, such as computers and Internet by members of the public. Computers in libraries were used by young people and adults, professionals and non-professionals, and students, for a variety of reasons. These included, learning how to type curriculum vitae (CVs), letters, minutes and other documents using word processing facilities. Computers were also used to access the Internet, allowing people to have access to current information for research. Through computer, people were also able to communicate with families, friends, and colleagues using email facilities, while the Internet allowed access to newspapers and jobs online (Maswabi et al. 2011).

The study by Bill and Melinda Gates Foundation (2012) found that public libraries ICTs facilities were used in African public libraries as tools to enable poor African countries to reach millennium development goals. These goals are (i) eradication of poverty and hunger, (ii) achievement of universal primary education, (iii) promotion of gender equality and empowerment of women, (iv) reduction of child mortality and improvement of maternal health, (v) combating HIV/AIDS, Malaria and other diseases, (vi) ensuring environmental sustainability, and (vii) development of a global partnership for development. In this study, Bill and Melinda Foundation (2012) found that, ICTs in those countries were used to teach young and old people new survival skills that would enable them to face the challenges posed by the ICTs era with confidence. For instance, in Kenya, Uganda and Tanzania, the study found that ICTs were used to teach farmers on new modern ICTs skills, including how to manage financial records and how to find market prices and connect with buyers of their products. In Zambia, the study found that computers in libraries were, among other things, used to offer computer-based lessons, thereby helping children on how to read in their mother tongue (Bill and Melinda Gates Foundation 2012).

In South Africa (SA), despite the fact that ICTs are not yet fully developed and operational, the availability of online connectivity is increasingly noticeable, even in less developed areas where financial restrictions, poor telecommunication and infrastructure failures are hampering the full realisation of an existing potential (Chisenga 2004; Kirsch 2010). According to Chisenga (2004), free Internet services were available at Gauteng Provincial Library Services, eThekweni Municipal Libraries, Free State Provincial Libraries and Mpumalanga Provincial Library and Information Services. However, Gauteng seemed to be far ahead of other provinces in as far as ICTs adoption and use is concerned. For instance, in EMM, which is one of the municipalities in Gauteng, Motumi (2012) found that computer-based ICTs facilities were used in all its forty three libraries.

Meanwhile, the study by Motumi (2012) found that other ICTs-based resources used in EMM libraries are videos, CDs, CD-ROMs, and DVDs, which are used for informational, recreational and educational purposes among other things. While computers are used to access OPAC, others have word processing facilities, which allow users to type documents such as letters, reports and CVs (Motumi 2012). Meanwhile, other computers have Internet, allowing access to the World Wide Web (WWW) services, through which people can search for jobs online and have access to most up-to-date electronic information. They also have

email services through which people can communicate with their families, friends and colleagues. The study by EIFL (2011) also found similar results as Masiphumelele public library, in the less developed communities of Cape Town, was found to be providing computer and high speed Wi-Fi Internet services. This library was found to have dramatically improved young people's computer skills, while at the same time having provided them with ICTs training. The situation seems to be different in the other provinces outside Gauteng and Cape Town, where Internet connectivity in most public libraries is not yet fully developed, as people still prefer to use manual card system (Kirsch 2010).

2.5.4 Situation in other countries

The use of public library ICTs facilities in other parts of the world, such as Australia, Bangladesh, India and Pakistan is also common. In India, for instance, the study by Chauhan (2004) found that various ICTs facilities were used by people of all ages (young and old). These include CD-ROM searching, online networking, photocopying, online information services, newspaper scanning services, online reservation services, database searching services, audio services, Internet access and electronic query services. In another study in India, Ghosh (2003) found that public library ICTs facilities in India were used to access the Internet and web technologies in opening up new ways of interactive communication between public libraries and the civil society. This study also found that public libraries ICTs, such as computers with Internet were used to ensure that the majority of socially excluded people, who had no access to ICTs elsewhere, were able to access them free of charge in the libraries (Ghosh 2003).

In sharp contrast to the Indian scenario, where the use of ICTs in public libraries was common, though not inclusive, the situation in Bangladesh was to a large extent reflecting what is happening in most developing countries of the world in as far as ICTs use in public libraries is concerned. Shuva (2005) found that the implementations and use of ICTs in Bangladesh public libraries was not satisfactory at all, as only few public libraries had computer facilities for use by members of the public. However, attempts were being made by the relevant authorities to remedy the situation so that such facilities could become available to members of the public (Shuva 2005).

In Pakistan, Mahmood (2008) found that public libraries had computer facilities, though only few of them had facilities meant for users. For instance, in Karachi, only five of 58 public libraries had computers that were used by both staff and users of libraries. While computers were mainly used for word-processing, others were used by staff for administrative functions. Some of the libraries were used by library users to access Internet. For instance, Quaid-e-Azam public library in Lahore, which was used by both young and adult users to access Internet as well as full text databases of national digital library of the higher education commission (Mahmood 2008).

2.6 Attitudes of users towards ICTs provision

According to Spacey, Goulding and Murray (2003), positive attitudes are fundamental in the acceptance, implementation and success of the new technology. In the meantime, Davis (1989) argues that one's attitude influences behavioural intention to use, and subsequently actual use, and can affect the way in which one uses the facilities. The author also stated that variables such as "perceived usefulness" and "ease of use", influence ICTs acceptance and use. In other words, if ICTs are easy to use and also perceived to be useful in helping individuals to get their needs met, those individuals' perceptions and attitudes towards ICTs are most likely to be positive (Davis 1989).

While the objective of this study was to establish users' attitudes towards public libraries ICTs facilities, few researchers in the UK looked into this aspect and found that most users had high regards for public libraries ICTs facilities. For instance, the study by Eve and Brophy (2000) and Chaplin (2002) found that most users of public libraries in the UK had high regard for ICTs, such as computers in libraries, and that such facilities were considered very or quite important in improving library services. Meanwhile, Spacey, Goulding and Murray (2003) found that unemployed people in the UK had very negative attitudes towards ICTs in public libraries, as they viewed them to be facilities meant for the workplace.

In Australia the study by Donat, Brandtweiner and Kerschbaum (2009) found that the same variables above, such as age and education, proved to be major determinants of attitudes patterns among users of public libraries ICTs facilities. The study found that young people were more likely to have positive attitudes towards ICTs than adults who were prone to

change and learning new things or “tricks”. The author also found that educated people were most likely to have positive attitudes towards ICTs than those with less or without formal education. However, there has been little focus on this aspect in the context of African public library research. It was studies by Adeyinka (2009) and Maswabi et al. (2011) that gave some insights into the attitudes of public library users towards ICTs in African public libraries, hence the researcher felt the need to focus into this aspect in this research.

According to Adeyinka (2009) the opportunities presented by ICTs in providing value-added information services and access to a wide variety of digital-based information resources have started changing people’s perceptions and attitudes towards ICTs. In his study in Nigeria, Adeyinka (2009) found that educated young people, who had access to the facilities before, were most likely to have positive attitudes towards ICTs than older people who were experiencing the technologies for the first time. In the same study, it was found that variables such as age, gender, prior knowledge and training, anxiety and educational qualifications had an influence on users’ perceptions and attitudes towards ICTs in public libraries. This study also found that women were most likely to have negative attitudes towards ICTs facilities in the libraries compared to their male counterparts, though reasons were not provided to justify this finding.

In Botswana, Maswabi et al. (2011) found that the implementation of Sesigo library ICTs project, in which computers and Internet-based resources were made available to all members of the public, had changed older people’s perception that public libraries ICTs facilities were only meant for student users. Because of the changed perceptions, most people’s attitudes changed to such an extent that both young and old, professionals and non-professionals, started using ICTs facilities to address their daily informational, recreational and educational needs (Maswabi et al. 2011).

2.7 Library users’ ICTs preferences

The objective of this study was to examine users’ ICTs preferences in public libraries. While most researchers have focussed on a range of ICTs-based facilities, as they were in use in public libraries (such as printers, computers with Internet, photocopiers CD-ROMS, videos and others), there has been a little focus on which facilities, among a variety of public libraries ICTs, are mainly preferred by public libraries users. It is quite clear that although all

the above facilities are in use in public libraries, some of the facilities are most preferred by users than others. Eve and Brophy (2000) have focussed on this aspect, and found that computers and Internet-based resources were the main preferred facilities because of their efficiency in making information available. In their studies, Hewitson (2002) and Vicente, Crawford and Clink (2004), Haneefa (2007), Bertot, McClure and Jaeger (2007), Bertot et al. (2008), Islam and Islam (2007) and Mahmood (2010), also found that computers and Internet based-facilities were most preferred in UK, India, US, Bangladesh and Pakistan libraries respectively because of their convenience and ability to ensure that access to information is made easier and quicker to help people make informed decisions in their lives. This is compared to other ICTs, such as, CD-ROM, printers, e-journals and online public access catalogue (OPAC).

Studies by Hewitson (2002) and Vicente, Crawford and Clink (2004) also found computers and their Internet-based WWW services to be the most preferred ICTs in UK public libraries based on their reliability as sources of information for study research, among other things. Chaplin (2002) also had similar findings in his study, as he found that computers and Internet-based emails were the most preferred facilities in the UK compared to CD-ROM, DVDs and other related facilities, as they were found to be making life easier by making information readily available. In the US, literature reveals that the situation is similar to that of the UK in as far as ICTs preference is concerned, as computers and their Internet-based facilities mentioned above were found to be most preferred by the majority of library users. Bertot, McClure and Jaeger (2007), found that computers and their Internet-based facilities were most preferred means of information access for displaced persons in USA after natural disaster Katrina. General members of the public were also found to be preferring computers and their Internet-based facilities in their efforts to get access to government services in USA (Bertot, McClure & Jaeger 2007)

In Pakistan, Mahmood (2008) found that computers and their Internet-related facilities were most preferred to the extent that they were considered to have significantly enhanced the service level and image of public libraries due to their efficiency and speed at which they make information available to the users. Islam and Islam (2007) had a similar finding in their study in Bangladesh, where they found that public library users preferred computers and their Internet-based facilities as they make it easier for people to have access to current information. Although limited, the available literature on users' ICTs preferences in African

public libraries reveals that the same facilities mentioned above are preferred. For instance, Motumi (2012) revealed that in Ekurhuleni Metropolitan Municipality, South Africa, the preference for computers and their Internet-based facilities was noticeable. Computers and their Internet-based facilities were preferred as they ensured that people had access to current information from Internet as well as being able to communicate with families, friends and relatives through emails (Motumi 2012). Therefore, although the above findings suggest that computers and their Internet-based ICTs are preferred in most public libraries, very little information on this aspect is available in the form of a research paper in South Africa (Ekurhuleni in particular), and this has necessitated this investigations.

2.8 Accessibility and barriers to ICTs take-up

Determining the accessibility of public libraries ICTs facilities to users of EMM libraries was also an objective of this study. One of the expected roles of public libraries, according to the American Library Association (2009), also known as ALA, is to empower users by providing access to the broadest range of information. According to ALA (2009) access to electronic information, including information available through the Internet, allows libraries to fulfil this responsibility much better. ALA (2009) also stressed that librarians and libraries are not expected to deny or limit access to electronic information because of its controversial content or because of the librarian's personal beliefs or views. They should, however, support access to information on all subjects that serve the needs of each user, regardless of the user's age or the content of the materials (ALA 2009). Meanwhile, Day (1997) reasoned that access is simply not an issue of public access points and their geographic locations alone. Citizens must be able to use the technology and have the capability to use the information. Day (1997) further stressed that, the mere fact that these are skills that most people do not possess, the issues of access should be linked to training, education and learning.

However, available literature reveals that access to most ICTs facilities in public libraries is affected by certain barriers. Both Yates (2009) and McClure, Jaeger and Bertot (2007), identified time limit as one of the barriers affecting access to ICTs facilities in USA public libraries. Time limit involves librarians limiting users' time to access the Internet in order to deal with a high volume of users wanting to use the facilities. Therefore, while limiting time allows other users to have access to the facilities, the challenge is that people do not have

sufficient time to use them (Yates 2009). Meanwhile McClure, Jaeger and Bertot (2007) identified infrastructure plateau as another barrier affecting access to libraries ICTs facilities. These include space, capacity (low bandwidth), funding and staff attitudes, as they limit the expansion of Internet access in USA libraries (McClure, Jaeger & Bertot 2007).

In his study, Oliver (2007) and Becker et al. (2010) found that some of the barriers limiting access to ICTs in US public libraries, and specifically Canada, were a lack of the following: computers and Internet connection at home, technical assistance from the libraries staff, confidence to use the facilities and training. A study by Monmouthshire libraries (2011) found that similar, but more specific set of barriers to ICTs take-up were limiting access to ICTs in public libraries. These were cost of ICTs services, inaccessibility of ICTs facilities, time limit and ageism. Meanwhile, the study by Chaplin (2002) found that the most common barriers to ICTs take-up in UK public libraries were:

Institutional barriers: Libraries charging policies may restrict or discourage certain sections of the community from using ICTs facilities available in the libraries. For instance, people who are on low income can be disadvantaged, as they cannot afford to pay for services such as printing and photocopying, which are available in libraries. Libraries opening hours can also be a barrier to ICTs uptake, if such hours are found to be unsuitable for a particular user group, such as day workers. For instance, libraries are open during the day, and closed at night, meaning that day workers may not have access to the facilities unless they use them on Saturdays when they are off duty.

Personal and social barrier: These include issues such as low income, poverty, issues pertaining to low self-esteem and forms of discrimination. These have the potential to prevent people from maximising the full benefits offered by ICTs. For instance, some people may not afford the costs associated with ICTs services, while others just lack confidence in themselves to use the ICTs in the libraries.

Perceptions and awareness: Some public library users, particularly old, uneducated, unemployed people, and people with lack of knowledge of how to use ICTs facilities, tend to think that libraries ICTs facilities are not for them or not relevant to their lives or needs.

These perceptions are most likely to negatively influence them not to use ICTs in libraries, thereby denying themselves the opportunity to be empowered by these facilities.

Environmental: These kinds of barriers include poor links to transport, the isolation problems experienced by rural communities and difficult physical access into and within buildings. For instance, people staying in an environment where there are no means of transportation are most likely to be deprived of the opportunity to visit libraries; hence, there is little chance for them to use public libraries ICTs facilities. This also applies to a situation where the library building itself is not user-friendly to a particular user group, such as the physically challenged, who need special facilities such as ramps to use the building. This user group may find it difficult to use the facilities if ramps are not there to allow wheelchairs to move freely to and from the building.

For the visually impaired users, the study by Mayhill (2002) found that they also faced a range of barriers that prevented them from using ICTs facilities in public libraries. These included lack of special facilities, such as Braille and talking books for the blind and visually impaired users. This view is also held by Burgstahler (2012), who identified lack of specialised computer facilities for blind users as also a barrier to ICTs take-up.

The situation in African public libraries is almost the same as that of the UK and US in as far as ICTs barriers are concerned. This is based on the fact that like in the UK and US, many barriers were found to be preventing users from maximising the full benefits offered by ICTs in public libraries. Studies by Chisenga (2006) and Alemneh and Hastings (2006) found that shortage of skilled manpower, lack of funds, poor telecommunications and infrastructure were among the obstacles affecting ICTs use or uptake in African public libraries in general.

2.9 Library users' ICTs knowledge and skills

It was also the objective of this study to determine the knowledge and skills of public libraries users in relation to CTs use in public libraries. It is without doubt that having a set of certain ICTs skills is a pre-requisite for one to be able to utilise public libraries ICTs facilities successfully. However, studies by Clark (2010) and Eve and Brophy (2000) in the UK, and Chisenga (2006) and Emojoorho (2010) in Kenya and Nigeria respectively, revealed that the majority of public libraries users, particularly those living in poorest communities, lacked

both ICTs knowledge and skills necessary to make effective use of ICTs facilities. The study by Clark (2010), for instance, found that some library users in the UK were unable to search the internet to find information needed, despite being computer literate. This, according to the author, was due to the lack of ICTs literacy skills among users, against the backdrop of information overload in the Internet. Although some users knew how to type, print or even open search engines, such as Google, Yahoo, using appropriate search terms to get information needed was a challenge, owing to the lack of ICTs literacy skills.

The study by Eve and Brophy (2000) and that of Spacey, Goulding and Murray (2003) also found similar results in the UK. In their study, Eve and Brophy (2000) and Spacey, Goulding and Murray (2003) found that most users of public libraries, particularly those living in areas of social exclusions, lacked both ICTs knowledge and skills to use the facilities. This resulted in majority of people not making use of ICT facilities available in public libraries. The situation in most African public libraries is also not yet satisfactory. Both Chisenga (2006) and Emorojo (2010) observe that most people in Africa still lacked knowledge of how to use the computers in libraries as well as lack of ICTs literacy skills, hence the high percentage of ICTs non-use in African public libraries.

2.10 Users' ICTs training programmes in public libraries

The objective of this study was also to determine if public libraries had ICTs training programmes intended to empower users on the effective use of ICTs facilities available in libraries. According to Dickard (2002), progress in bridging the digital divide requires continuous emphasis on training if people are to use ICTs to break economic and education disadvantage cycle. Although this aspect had received little attention from past researchers who mainly focused on training programmes for staff, research by Bertot et al. (2008) and Oliver (2007) in the USA and Canada found that libraries were providing both formal and informal training to patrons on a variety of topics that involved computers and Internet use. Among the training provided were: how to set-up emails and web browsing; how to use computer mouse, keyboard and printing facilities; how to use search engines such as Google and Yahoo, as well as how to use word processing, spreadsheet and presentation facilities. The study by Bertot et al. (2008) also found that training were also provided on how to use library's online public access catalogue, using online databases, accessing online job-seeking

and career related information, safe online practices and accessing online government information at public libraries in the USA.

In Africa, studies conducted by Chisenga (2004), EIFL (2010) and Maswabi et al. (2011) found that despite funding problems, which had a negative effect on libraries' abilities to implement their training programmes, some libraries were providing training to their users. For instance, the study by EIFL (2010) found that in Kenya, 1600 people had been trained in Eldoret and Kisumu libraries on how to use ICTs resources. Meanwhile, a similar study by Maswabi et al. (2011), found that in Botswana, users of public libraries received training on how to use ICTs facilities. The study by Maswabi et al. (2011) found that library users benefitted from a public libraries' ICTs project called Sesigo. This project was started with the aim of making computers and Internet-based facilities accessible to all users of libraries in Botswana. The project had training programmes that empowered users on how to use ICTs facilities such as computers and Internet available in libraries. The program equipped users with skills that enabled them to know how to type and use Internet facilities to get information needed (Maswabi et al. 2011).

2.11 Benefits of information and communication technologies in public libraries

It is without doubt that the automation of library services has come with its own benefits to users of public libraries. Not only has ICTs improved the manner in which services are rendered to users of public libraries, but they have also given rise to the availability of electronic information in libraries to users. Chauhan (2004) stated that automation of library functions, such as acquisitions, cataloging, circulation and patron catalogues, has accelerated the way in which such functions are performed. This, according to Chauhan (2004), has made all parts of the library structure faster, more accurate and more accessible. Okolo (2002: 43) argued that ICTs are crucial in improving services to users as well as creating opportunities for the development of new library services. Meanwhile, the following have been identified by Bruno (2011) as some of the benefits of public libraries ICTs facilities:

Fast and accurate: Through ICTs, library functions such as book acquisition, cataloguing and loaning of materials are performed both fast and accurately. This includes maintaining acquisition records and bibliographic data of many specific materials, recording of multiple

transactions to keep track of each patron's and material's circulation status. By inputting all library data into one central database, record maintenance is done both faster and more accurately.

Decentralized access: ICTs enable libraries patrons to be able to access the same database as that of staff. In other words, in addition to having access to library's catalogue, users can also be able to perform other transactions, such as placing holds, renewing materials, or setting up an interlibrary loan from their homes or workplaces. These tasks were previously centralised in public libraries and only staff-oriented.

Quick, accurate updating: ICTs facilities ensure that check-out and check-in of materials in libraries are done quickly, with accurate updating of materials. This saves patrons time as they do not have to wait in long queues to get materials issued to them as they can now use free-standing check-out and check-in kiosk to process their own loans.

Standardisation of data: The advent of ICTs has ensured that libraries are able to maintain common standards for cataloguing and subject classifications. With the advent of automation, the machine readable catalogue (MARC) format has made available both national and international standards for how catalogue records are communicated from one machine to another. Together with another important library automation standard called "linked systems protocol," MARC essentially allows library users to effortlessly access not only their own library's records, but the records of many remote library systems.

Increased effectiveness: ICTs facilities ensure that libraries tasks are performed effectively and efficiently, therefore ensuring that human labour is performed faster and more easily. This gives staff members enough time to focus on providing services that have always required their full attention such as helping with reference and homework assistance, book selection, readers services, outreach to homebound and others, story times and programming for children, young adults and adults. In other words, automation of the library helps take some of the workload off of librarians and other staff members in the areas of acquisitions, cataloguing and circulation, which in turn allows them to better serve their patrons. This extra time can lead to more programs being facilitated in the library and make library staff available to answer reference questions, and help people who are having trouble researching or finding the right information. Therefore, apart from freeing staff from tedious, repetitive

and monotonous tasks associated with the old manual systems, users get cost-effective services through ICTs in libraries.

Easier access: One of the factors that influence the successful use of resources available in libraries is the ease of access of such resources. Resources that are hard to find are more likely to discourage users from using them in future. Therefore, the advent of ICTs does not only ensure ease of access to materials or books, but it also makes it easier for users to access journals and some books online from a home computer or elsewhere, provided the users have access to the Internet.

Hauroo (2009) observes that ICTs have an immense potential in helping users to search for information to make informed decisions, as well as linking them to the rest of the world. Public access to ICTs facilities and skills training provide opportunities for citizens to develop the information and ICTs literacy skills needed to successfully participate in a knowledge society (Olivier 2007: 5). Haneefa (2007) identified similar benefits, when he observed that through ICTs certain resources and services could be easily shared, distributed, updated, manipulated, and rapidly searched.

Meanwhile, according to Newman (2004), public libraries offer three critical ingredients, which are needed to ensure that everyone stands to benefit in the digital era, and these include infrastructure, content, and access. The availability of computer facilities and telephone, and the fact that they are accessible to the public free of charge make public libraries the most sought after information resources centres today.

In Africa, ICTs are offering similar benefits to libraries and library users as those mentioned above. For instance, Nkanu and Okon (2010) found that ICTs in Nigerian libraries ensured that users' access to information was done quickly, easily, efficiently and adequately. In their study, Maswabi et al. (2011) also found that people in Botswana acquired ICTs skills as a result of ICTs training offered in the libraries

2.12 Non-use of information and communication technologies in public libraries

Although it was not an objective of this study to investigate the reasons for non-use of ICTs in public libraries, the researcher felt it necessary to look into this aspect from literature's point of view. This was done in order to get a clear background from literature, as to why some users prefer not to use ICTs in libraries despite such facilities being available free of

charge or at reasonable prices at public libraries globally. In their study in the UK, Eve and Brophy (2000) found the following to be some of the reasons why some users of public libraries did not use ICTs facilities:

People having access to facilities elsewhere: People who had access to ICTs such as computers and their Internet facilities elsewhere apart from the public libraries were most likely not to use ICTs in libraries. This includes having access to ICTs at home, cybercafés, educational establishments and friends' relatives.

Lack of interest: Some users lacked interest in using the facilities which also related to perceptions and attitudes.

Insufficient assistance from staff: Some of staff members were unwilling to provide assistance because they do not have ICTs skills themselves to help others.

Lack of knowledge of the existence of ICTs services: The study found that most respondents were less aware of ICTs services available in the libraries. For instance, while there was evidently a high awareness of ICTs facilities provided by libraries in Cheshire and Cumbria, libraries users in Birmingham seemed to be less aware of services offered, with 15% indicating that their reason for non-use of facilities were "not knowing" the services were available.

In Africa, the most common reason for non-use of facilities relates to lack of knowledge about the opportunities offered by public libraries ICTs facilities, coupled with library users' lack of computers and ICTs literacy skills. This, according to Chisenga (2006) and Were (n.d.), is common mostly in disadvantaged rural communities where facilities are hardly available.

2.13 Challenges experienced by library users in using information and communication technologies in public libraries.

Although ICTs are credited with most developments taking place in public libraries today, literature reveals that there is a range of challenges that users experience in using these technologies in public libraries. Chaplin (2002), Oliver (2007), Emmanuel and Sife (2008),

Were (n.d.), Chisenga (2006) and Alemneh and Hasting (2006) are some of the scholars who looked into this theme in their studies. These scholars found that there are many challenges that make it difficult for users of libraries to maximise the full benefits offered by ICTs facilities in public libraries. Though the study by Emmanuel and Sife (2008) in Nigeria focussed mainly on academic libraries, it was evident that users of all types of libraries, be it university, school or public libraries, face similar challenges in as far as ICTs use is concerned. The above study found that despite the evolving technologies having the ability to add value to library services “by presenting new modes of collecting, storing, retrieving and providing information”; there are many challenges that library users face with regard to ICTs use in public libraries, which librarians and library users have never seen before (Emmanuel and Sife 2008). The challenges relate to, among others, unreliable power supply, restrictive ICTs usage policies, issues relating to maintenance of facilities as well as lack of support from library staff. The challenges that library users experience with regard to ICTs use may be summarised as follows:

Lack of information and computer literacy skills among library users: This has been identified by Emmanuel and Sife (2008) as the causes of underutilisation of ICTs facilities in many African libraries. Most users of libraries have no information literacy (IL) skills to enable them to use information sources to obtain required information effectively. According to Emmanuel and Sife (2008), both computer and information literacy skills are needed by users of libraries to effectively use the rapidly changing information resources. While computer literacy skills relate to computer hardware and software (keyboard, mouse, printer, file management, word processing, spreadsheets, databases, Internet etc.), IL focuses on efficient and effective use of information sources to obtain required information (Emmanuel and Sife 2008). Information literacy goes beyond effective knowledge of keyboards and mouse operations. Oliver (2007: 1) also identifies lack of IL skills as the main challenge that library users face when using public libraries ICTs. Information literacy is seen as a survival skill in the information age. It is defined as “the ability to recognise when information is needed and to locate, evaluate, and use effectively the information needed” (Oliver 2007: 1) Therefore, users who lack such skills find it very difficult to maximise the full benefits offered by public libraries ICTs facilities.

Unreliable power supply: Emmanuel and Sife (2008) observed that ICTs facilities rely on electricity for their functioning”. Therefore, frequent power cuts result in library services

being disrupted most of the time. This has a negative impact on services to the users of public libraries and has the potential to discourage both actual and potential users of the facilities from using ICTs. In an effort to address this problem, the study by Emmanuel and Sife (2008) found that some libraries decided to purchase backup generators to carry over when electrical power was down. The study by Haliso (2011) also found this to be one of the difficulties that users of public libraries face when using public libraries ICTs facilities.

Restrictive institutional policies and procedures: Regarded as barriers to ICTs take-up by Chaplin (2002), policies and procedures make it difficult for users to make effective use of public library ICTs, as they restrict the use of the facilities. Paying for ICTs services in accordance with the library's charging policies, for instance, make it difficult for low-income people who live in disadvantaged areas where most services are unavailable to make effective use of the facilities (Chaplin 2002). Meanwhile the ICTs policy that restrict users to use the facilities for a specified time make it difficult for users who need quality or enough time to use the facilities (Chaplin 2002).

Low bandwidth: Emmanuel and Sife (2008) refers to bandwidth as an amount of information that can be carried in a given period (usually a second) over a wired or wireless communication link expressed as bits per second (bps). Whenever there are few bandwidth in bits per seconds, users get frustrated, as it takes long to retrieve information from the Internet, as downloading information resources from the Internet is difficult. This view is also held by Alemneh and Hasting (2006) who argued that most nations still lack sufficient international bandwidth to reliably deliver various digital resources and services in any volume over the Internet.

Poor maintenance of ICTs: Frequent maintenance of ICTs facilities is crucial for sustainability of any ICTs services. One of the main challenges that users experienced in public libraries with regard to ICTs is that facilities are hardly maintained, due to lack of trained ICTs technicians and maintenance budget among other things. While it is imperative that there should be qualified technical personnel for managing and maintenance of ICT facilities and networks that the library system runs as well as enough maintenance budgets, many libraries have inadequate qualified ICT personnel and budget. This results in substandard performance of ICTs in the libraries (Emmanuel & Sife 2008).

Out-datedness of computer facilities: In their study in Nigeria, Emmanuel & Sife (2008) also found that that out-datedness of facilities was one of the challenges that users faced in using libraries ICTs; as such facilities could not be relied upon. This was found to be linked to the lack of proper funding or budget cuts, which had almost become a norm to most public libraries around the globe.

Network problems: For ICTs to be able to function effectively in any given environment, it is crucial to have good ICTs infrastructure in place. However, many users of public libraries are experiencing problems with computer, which are always down. This is as a result of networks problems emanating from poor ICTs infrastructure. There is either a lack of or inadequate information and communication technology infrastructures in most public libraries and this negatively affects the implementation and operation of public libraries computers and other ICTs facilities (Ebiwolate 2010). These challenges are also common in Bangladesh libraries.

Human resources: The study by Emmanuel and Sife (2008) also found that most traditional librarians in Nigerian libraries had low ICT skills and were found to have technological phobia. This made them to be unwilling to provide necessary ICTs-related assistance to library users (Emmanuel and Sife 2008). This created some challenges for users who lacked ICTs skills, as they relied on staff for assistance. Meanwhile, Ebiwolate (2010) found that staff shortages in most libraries and the fact that libraries in Nigeria were generally unable to provide the staff help needed by users, also created problems, as users could not be able to get the information needed to answer particular information needs.

Shortage of trained ICTs professionals: The fact that libraries are adopting ICTs in order to meet the needs of their users means that the demand for competent ICTs experts in libraries is growing rapidly. While qualified computer professionals are needed to help users in addressing some ICTs related issues, most studies conducted in Africa, such as that of Alemneh and Hasting (2006), found that that there was a lack of trained ICTs professionals in most public libraries in Africa. This could be linked to factors such as poor salary, ICT infrastructure problems, work environment and limited opportunities, as professionals with good ICTs skills in Africa preferred to work somewhere else than libraries. Based on this most users are deprived of the opportunity to use the facilities, especially if such facilities are broken and need an expert (who are rare) to fix them.

Inadequate information materials in Braille for the visually challenged users: Literature reveals that like sighted users, blind and visually impaired users need access to specific information on literacy, education, employment and community. According to Ng'ang'a (2003), the Visually Impaired Persons (VIPs), as the minority, are not well represented both in public and private realms of society, and are seldom considered as full citizens and participants in the national, political and economic life. This tendency, according to Ng'ang'a (2003), can change if this group of people have access to information. Access to information means access to libraries, especially the public libraries that can play a crucial role in the provision of library and information services to the Visually Impaired Persons. This is in line with the UNESCO public library manifesto, which proclaims that specific services and materials must be provided for those who, for whatever reason, cannot use the regular services and materials. For example: linguistic minorities, people with disabilities or people in hospitals or prisons. However, most public libraries have little or no such material in Braille format, and this denies these people access to free and basic information (Ng'ang'a 2003).

Inadequate ICTs equipment or facilities: In order for the library users to be able to maximise the full benefits offered by libraries ICTs, libraries should ensure that there are enough ICTs equipment or facilities to be used by users. Unfortunately, this is not the case in most public libraries, where inadequate ICTs result in users competing for the few available facilities (Ng'ang'a 2003). In most libraries, people have to compete for the few available facilities where the principle of first come first served is applied. This makes it difficult for users, including the visually impaired, to use the facilities, as libraries are hardly equipped to provide adequate ICTs, such as Perkins Braille Machines, and CCTVs for them. Users of public libraries in Kenya were also found to be facing this difficulty (Ng'ang'a 2003).

Lack of proficiency in Braille for the visually impaired users: This is common among the visually impaired users who are Braille illiterate, as they have to rely on library staff for assistance. The difficulty is that since most staff members are not proficient in how the facilities work, they are unable to provide necessary assistance to visually impaired users (Ng'ang'a 2003). This denies the visually impaired users the opportunity to effectively use the facilities available for them in public libraries (Ng'ang'a 2003).

Inadequate storage space for books in Braille: Books in Braille comes in multiples per title, therefore having enough space for such large volume of books becomes a challenge for libraries. The lack of storage space affects users since the libraries can only manage to purchase few of the facilities for them.

The study by Chisenga (2004) found that users of ICTs in public libraries in the Anglophone African countries experienced challenges relating to lack or inadequate ICTs personnel to assist users, as well as insufficient facilities. In another study, Chisenga (2006) also found that library users in Eastern, Central and Southern Africa experienced similar challenges, namely, lack of adequate ICTs facilities in libraries and lack of staff or professional skilled personnel to help users with ICTs- related queries.

2.14 Summary

As demonstrated in the literature above, the issue of ICTs use in public libraries has been a subject of many studies conducted both locally (in Africa) and internationally. It is evident from the literature that the use of ICTs in public libraries in the past has mainly been to assist staff in performing administrative and management function. However, due to the way in which information is being sought by users of public libraries and the fact that up to date information is available electronically in recent years, libraries have started introducing user-based ICTs facilities such as computers and Internet-based resources for the benefit of users.

Literature above also demonstrates that of all the ICTs-based facilities available in libraries such as CDs, CD-ROMs, videos, printers, photocopiers and faxes, computers and their Internet-based facilities are most preferred by public libraries users all over the world. It is also evident from the literature above that the ability of these facilities to address the needs of all people in communities has changed people's attitudes and perceptions towards them. For instance, most sceptics of ICTs in the various studies developed changed attitudes towards ICTs due to the power of Internet and its www services.

The above literature also informs the current study that, due to barriers such as time limit, restrictive libraries policies and guidelines, coupled with lack of special facilities for people who are visually impaired, many people are unable to access the facilities. These lead to a

situation whereby users are unable to maximise the full benefits offered by the ICTs facilities available in public libraries. Apart from these access barriers, it is demonstrated in the above literature that there are also many challenges that library users experience in utilising ICTs facilities in libraries, and these include costs of ICTs, insufficient facilities, lack of trained ICTs professionals to assist users, lack of computer and ICTs literacy skills among users, staff attitudes and restrictive policies.

As demonstrated above, many studies conducted on the subject focussed mainly on the types of ICTs available in public libraries, uses of ICTs in public libraries (including what facilities are used, by whom are they used, and for what reasons are they used) and challenges experienced by users in using ICTS in libraries. The main gap in the literature relates to limited research in areas such as availability of users' training programmes, users' attitudes and perceptions towards ICTs, users' ICTs preferences as well as users' ICTs knowledge and skills within the context of Africa, hence these have been identified as some of the critical areas of investigation in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter Two dealt with the review of literature relevant to this study. The review focussed on the following key themes, which also form the basis of this investigation: an overview of ICTs development trends in public libraries, roles of ICTs in public libraries and types of ICTs available in public libraries. It also focussed on the main uses of ICTs in public libraries, attitudes of public library users towards ICTs provision, availability of users' ICTs training programmes in public libraries, users ICTs preferences, accessibility of ICTs in libraries, non-use of ICTs in public libraries, as well as challenges that users face in utilising ICTs in public libraries. A literature review was necessary to find out what has been researched on the subject under investigation in public libraries, and how the previous findings inform the current study. The objective of this chapter is to discuss the various research methods and approaches adopted in undertaking this study.

Goddard and Melville (2001:18) state that research methodology is a means through which solution or solutions to research problems or questions could be found. Such path, according to Kumar (2011: 5) may be taken within a framework of set rules, philosophy, principles and formal conditions which ground and guide scientific inquiry in order to organise and increase our knowledge about phenomenon. Orlikowski and Robey (1991) observed that research methodology deals entirely with the research strategy, and this includes both the theoretical and philosophical implications of making choices of methods used when doing research. According to Neuman (2000), methodology in research affects the legitimacy and generalisability of the study. Orlikowski and Robey (1991) argued that research has adopted various forms of theoretical positions in studying the ICTs field.

In this study, research methodology consists of research approach and design, population and sampling and data collection techniques. The other key issues discussed in this chapter include validity and reliability, ethical considerations and evaluations of research methodologies used.

3.2 Research approach and design

Buabbas and Medjdoub (2009) declared that the purpose of the research determines the method, the approach and the technique of any study. Therefore, in order to achieve significant outcomes in any study, one needs to construct an appropriate and fitting method (Cohen, Manion & Morison 2000). The nature of ICTs and library science fields, according to Abdulhadi (2003), allows different research approaches and methods to be used, hence there are diverse research methods being applied in social science studies today to improve the standard of the library and information and communication technology research. According to Neuman (2000) and Buabbas (2009), among the various methodologies being applied in social science studies today are qualitative and quantitative methods. The mixed methods research (MMR), as it is commonly known, is also being favoured by many researchers, who prefer to adopt a holistic approach in finding solutions to research problems. Ngulube, Mokwatlo and Ndwandwe (2009: 108) showed evidence of the use of MMR in Library and Information Science (LIS) research.

Neuman (2000: 121) is of the view that research can either follow quantitative or qualitative approach. This view is also held by Leedy and Ormrod (2005) and Kumar (2011). The differences between the two approaches are summarised in Table 3.1.

Table 3.1: Differences between quantitative and qualitative research (Neuman 2000: 121)

Quantitative research	Qualitative research
Test hypothesis that the researcher begins with.	Capture and discover meaning once the researcher becomes immersed in the data.
Concepts are in the form of distinct variables.	Concepts are in the form of themes, motifs, generalisations, and taxonomies.
Measures are systematically created before data collection and are standardised.	Measures are created in an ad hoc manner and are often specific to the individual setting or researcher.
Data are in the form of numbers from precise measurement.	Data are in the form of words and images from documents, observations and transcripts.
Theory is largely casual and is deductive.	Theory can be casual or non-casual and is often inductive.

Procedures are standard, and replication is assumed.	Research procedures are particular, and replication is very rare.
Analysis proceeds by using statistics, tables, or charts and discussing how what they show relates to hypothesis.	Analysis proceeds by extracting themes or generalisation from evidence and organising data to present a coherent, consistent picture.

However, research can also follow a combination of both approaches. This, according to Leech and Onwuegbuzie (2009: 265) allows flexibilities in understanding problems, and offers multiple insights into their solutions. For the purpose of this study, both the quantitative and qualitative research approaches were adopted to solicit views from respondents (library users and control librarians) by means of questionnaires and interviews. A quantitative approach was considered because the study sought to identify answers to the more descriptive questions in obtaining an overview of the situation in which ICTs facilities were being used in libraries (Harding 2000:7). In the meantime, the qualitative approach focused on “users perceptions, views, opinions and beliefs” on access to ICTs facilities in the libraries (Neuman 2000: 122) It was used to collect and analyse qualitative data from the staff (control librarians).

The complementary use of the two methods was valuable for this study, as it led to a greater understanding of the problem and gave a broader view of ICTs and their utilisation in EMM libraries. Neuman (2000: 122) suggests that the best option is for a range of approaches that allow flexibilities in understanding problems, and offering multiple insights into their solutions. The two approaches were used complementarily to collect and analyse data. According to Eve and Brophy (2000), in studying ICTs use in libraries, statistical information provide a general pattern of ICTs use, what ICTs facilities are used and by whom, while qualitative data fills in details on “why people use the services and how they value them”. The decision to follow a qualitative route of data collection and analysis, in addition to the quantitative route, is because library programmes and services are “difficult to evaluate statistically, and that statistics (alone) on library programmes and services cannot be relied upon” (Chaplin, 2002).

O’Sullivan and Rassel (1995: 478) defined quantitative approach as “that type of research in which values of variables are characterised by numbers or symbols that scientifically test a

theory". Similarly, a quantitative approach is defined by Creswell (2003: 18) as the kind of research approach in which the investigator uses primarily post-positivist claims for developing knowledge, employs strategies of enquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data. It mainly uses questionnaires to collect data that are quantitative in nature (Neuman 2000: 121). Gay, Mills, and Airasian (2006) assert that quantitative data is a "collection of numerical data in order to explain, predict, and/or control phenomena of interest". Qualitative research is characteristically used to answer questions about the complex nature of the phenomenon, often with the purpose of describing and understanding the phenomenon from the participant's point of view (Leedy and Ormrod 2005: 94). The choice of both the quantitative and qualitative approaches for this study was informed by the nature of data collected. While the use of closed-ended questions produced quantitative data in the form of numbers, the use of open-ended questions elicited qualitative data in the form of words and images as respondents had to provide detailed answers to questions asked. Chaplin (2002) also adopted the same approach in studying the same phenomenon in the UK.

The research design of this study involved two crucial aspects, namely, the review of related literature, as well as a survey of relevant population by means of mailed questionnaires and interviews. As already mentioned in Chapter Two, a literature review was necessary to put the study in its proper context, by identifying and analysing various issues in the literature that were relevant to this study. A survey was relevant for this study, as surveys are most appropriate for studying aspects such as users' behaviour, attitudes and beliefs (Neuman 2000: 247). The research questions guided the study in terms of what data was needed to answer the questions and how such data was to be collected and analysed.

3.3 Population

A population is an entire group of persons or set of objects under study or investigation. It is described by Babbie, Haley and Zaino (2003:112) as "that group (usually of people) about whom the researcher wants to draw inferences". According to (Nachmias & Nachmias 1996:164), the population has to be defined in terms of the content, unit, extent and time. The population for this study was all 43 public libraries in Ekurhuleni Metropolitan Municipality, which were under study, as of January 30, 2011. As already reflected in Table One, this

included eleven libraries in the Northern region, sixteen libraries in the Southern region and sixteen libraries in the Eastern region. The study targeted 24033 registered users of the eight libraries selected for the study, as well as eight (8) control librarians in charge of libraries targeted for the study. The figures above (for registered users) were compiled from Ekurhuleni libraries' registered users' database. While registered users were selected because they were beneficiaries of ICTs facilities available in the libraries, control librarians' (librarians in charge of libraries) choices were based on the fact that they were seen as people who would provide meaningful contribution to the study, as they were working in libraries under investigation.

3.4 Sampling

It is unlikely for researchers to study the entire body of relevant facts about the whole group of people or set of objects under investigation, due to limited time and costs. Therefore, the findings and conclusions in survey research are based on information gathered from a limited number of people or of objects from whom generalisations can be made about the whole number. This selected group from the population, according to Nachmias and Nachmias (1996:201), is called a sample. Due to the fact that libraries in Ekurhuleni have different size categories, namely, Small, Medium and Large, a stratified random sampling technique was used to select libraries in each category to be part of the study.

The choice of this sampling technique was because it is the most relevant technique to be used in a situation where the population to be studied is heterogeneous (Neuman 2000: 208). According to Neuman (2000), stratified sampling has the ability to produce samples that are more representative of the population if the stratum information is accurate. By using this technique, the researcher did not leave the representativeness of the sample entirely to chance, but he made sure that the sample was similar to the population under study in certain respects. This was achieved through ensuring that all libraries in different size categories in Ekurhuleni were equally represented in the study. The attraction of stratified sampling technique was that it reduced the standard error by controlling a proportion of the variance (Sapsford 1999:70). In stratified sampling, a researcher first divides the population into sub-populations (strata) based on supplementary information. After the division, the researcher draws a random sample from each population, using either simple or systematic sampling

within strata. In this case, a simple random sampling technique was used to select libraries in the different strata (sizes) to be part of the study.

3.4.1 Sampling procedure

Leedy and Ormrod (2001: 219) state that, the foundation of survey research lies in sampling procedures. In conducting a research project, the researcher must not only state the sample technique used, but also clearly describe the procedure followed in selecting the sample (Ngulube 2005). The procedure followed in selecting libraries for inclusion in the study was as follows: using the inventory list appearing in Chapter One, EMM libraries were first divided into three different size categories (strata), namely, Small, Medium and Large. After the division, a simple random sampling technique was used to select libraries in each stratum to be part of the study. This was done by first assigning numbers to all libraries in the different size categories, and then randomly selecting numbers in each category to get the total number of libraries required for the study. As a result, three libraries were selected from Large libraries and three were selected from Small libraries. However, only two libraries were selected from Medium-sized libraries. The reason for this was that medium-sized libraries are less represented in Ekurhuleni, where there are only four libraries, compared to those in other size categories (see table one). Based on this selection procedure, the following eight (8) libraries were selected for this study:

Table 3.2: List of libraries selected for the study and the communities they represent

Library size category	Name of library	
Small	Actonville Library	Located in a coloured community and would represent the view of coloured users
	Reiger Park Library	Located in an Indian community. The reason was to get views from the Indian community on how they use ICTs in libraries. These people are also among the previously disadvantaged groups of people in South Africa.
	Tembisa-West Library	Located in a township where majority of users are blacks. These were historically disadvantaged people who had no access to modern facilities and will represent views of disadvantaged people.

Medium	Brakpan Library	Located in a metropolitan area where majority of users are mainly white and well to do people, and will represent views of white and well to do people
	Germiston Library	Located in a town where majority of users are middle class. The community is made of mixed races, i.e. blacks, white, coloured and Indians
Large	Benoni Library	Located in a metropolitan area where majority of users are mainly white and well to do people, and will represent views of white and well to do people
	Boksburg Library	Located in a metropolitan centre where majority of users are well to do people. Whites constitute the biggest community of users
	Edenvale Library	Located in a metropolitan area where majority of users are mainly white and well to do people, and will represent views of white and well to do people

Registered libraries users were randomly selected using a simple random sampling technique to be part of the study. The selection was done by first accessing databases of registered users from each of the participating libraries. The databases (comprised of completed membership registration forms located in libraries counter drawers) provided the researcher with names, telephone numbers and email addresses of users who were registered in libraries participating in the study. Lists were then compiled from each of the libraries' databases, and all elements (names) in the lists were assigned numbers. The numbers were then randomly selected in each of the libraries' lists, until targeted numbers per libraries were arrived at. Neuman (2000) observed that in order to get a simple random sample, a list should be compiled and all elements in the lists (sample frame) should then be numbered according to mathematically random procedure. Once that has been done, a researcher uses a list of random numbers to decide which elements to select for the study. As already mentioned above in section, 3.3 control librarians of all eight libraries selected for the study were included in the study in order to get their views on the utilisation of ICTs in their libraries.

3.4.2 Sampling size

Ngulube (2005) pointed out that determining the size of the sample has been a major problem for most researchers. According to this author, many researchers hardly discuss the degree of variability or diversity of the population under study. Kumar (2011) observes that aspects such as, what you want to do with the findings, the type of relationship you want to establish as well as your purpose in undertaking research are the main determinant factors when deciding on a sample size. Meanwhile, Descombe (1998:21) argues that in order to generalise from the findings of a survey, it is important for the sample not only to be carefully selected to be representative of the population, but it needs to include a sufficient number. Ngulube (2005) stresses that a decision has to be made about the size of the sample during the planning stage of a sample survey. The researcher has to establish how large the sample should be, and this is vital considering that a sample that is too large could result in resources being wasted, while a small sample could “diminish the utility of the results” (Cochran 1963). Ngulube (2005) and Kumar (2011) concur that a large sample is very likely to be representative and may give the researcher the confidence that the findings truly reflect the views of the population at large.

Neuman (2000) and Kumar (2005) emphasise that in conducting research, the researcher’s decision about the best sample size depends on, (i) the degree of accuracy required, (ii) the degree of variability or diversity in the population, as well as (iii) the number of different variables examined at a time. The same authors are also of the view that in determining a sample size, the principle “the smaller the population, the bigger the sampling ratio” has to be adhered to, for an accurate sample. While some researchers, such as Seaberg (1988) and Grinnell and Williams (1990), are of the view that the size of the sample should be 10% of the total population, Ngulube (2005) observes that a sample size should be based on some percentage of the population from which it is drawn. Dillon, Madden and Firtle (1994), are of the opinion that the sample size of the population does not entirely depend on the size of the population, but that the adequacy of the sample depends on its relationship to the population being surveyed. These authors also argue that while sample sizes for homogeneous populations are likely to be smaller, heterogeneous populations may require larger samples.

Ngulube (2005) further points out that the availability of a variety of tools, such as statistical power analysis software packages for use today by Library and Information Science (LIS)

researchers makes it easier to determine sample sizes in research. According to Creative Research Systems (2012), power and precision are among the statistical power analysis software packages that can be used for the calculation of a sample size for a defined population. It is also recommended that one may use the sample size calculator of Creative Research System in determining appropriate sample sizes for the study (Creative Research System 2012; Ngulube 2005). However, for the purpose of this study, the size of the sample was eight (8) libraries, which were randomly selected from the total population of 43 libraries in Ekurhuleni, and is categorised as follows:

Table 3.3: Libraries sample sizes

Library size category	Name of sample libraries	Sample size
Small	Actonville	3
	Reiger Park	
	Tembisa-West	
Medium	Brakpan	2
	Germiston	
Large	Boksburg	3
	Edenvale	
	Springs	
Total sample		8

Although the above sample size is not based on some scientific calculations or literature, the researcher believes that the number of libraries selected for this study was adequate for generalisation to be made of the whole Ekurhuleni libraries population. Meanwhile, a Sample Size Calculator of Creative Research System was used to get a precise number of respondents to participate in the study. According to Ngulube (2005), one may use a sample size calculator in order to determine a sample size, with a 95% confidence level “so that the results are accurate to within $\pm 3\%$ ”. Bartlett, Kortlik, and Higgins, (2001) suggest that a sampling error of 5% is acceptable in most research but then, a 10% or lower sample error level is acceptable if the researcher is more interested in identifying marginal relationships, differences or other statistical phenomenon as precursor to further studies. Therefore, in determining a total number of respondents to participate in this study, the confidence level was the priority rather than the sampling error level. This resulted in the researcher using a

95% confidence level and a 15% (.15) sampling error to get sample of users in each stratum, because the statistical phenomenon that came out of the research were not an end in themselves, but a part of the results to be compared with those from other data collection methods. The total users sample in each stratum was taken in proportion to the size of the stratum. Therefore, out of the population of 24033 registered users of libraries participating in the study, only 332 were included in the study. Table 3.4 below presents the population of registered users per library, their sample sizes and percentages:

Table 3.4: Total number of users targeted for the study per library

Name of library	Population of registered users	Sample size per library	Percentage %
Actonville (Small)	965	41	4%
Brakpan (Medium)	2236	42	9%
Benoni (Large)	3976	42	17%
Tembisa-west (Small)	689	40	3%
Edenvale (Large)	6062	42	25%
Reiger-Park (Small)	882	41	4%
Germiston (Medium)	2873	42	12%
Boksburg (Large)	6350	42	26%
Total	24033	332	100%

The research is more likely to get a valid result representative of all libraries and users in all the regions if stratified and simple random sampling techniques are used to select libraries and users for inclusion in the study respectively. By using stratified and simple random sampling techniques, the researcher has all the advantages of random sampling, and “he does not need to sample nearly as many people” (Ngoepe 2008: 27). As already indicated in section 1.8, Control librarians were included for being part of libraries selected for the study.

3.4.3 Sampling frame

A sample frame is considered by Ngulube (2005) to be “a major ingredient of the overall sample design”. Meanwhile, both Neuman (2000) and Leedy and Ormond (2005: 183) describe a sample frame as a comprehensive list that closely approximates all the elements or units in the target population that the researchers often prepares. For the purpose of this study, the library inventory that lists all libraries in Ekurhuleni according to their sizes and locations was used as a sampling frame. The lists of registered users compiled from each of

the participating libraries users databases were used as sampling frames for users in this study.

3.5 Data collection tools

In conducting a research, a researcher uses different tools to collect data from respondents. Although interviews, observations and questionnaires are among the most used methods of collecting data, records, files and existing evidence are also preferred by some researchers as main sources of data (Neuman 2000). The main preferred means of collecting data from users of EMM libraries in this study was a mail questionnaire (see Appendix D). The use of this technique was influenced by the discovery that all the users sampled for this study had email addresses linked to their names. The other reason for the preference of mail questionnaire as a data gathering tool was that, compared to other survey types, such as telephone surveys, face-to-face surveys, focus groups and others, questionnaires were considered to be the most relevant data collection method for this study, based on the fact that they are economical and easy to administer (see advantages in section 3.5.1.1).

In order for users to be considered for this study, verification was done to ensure that those selected were active registered users of Ekurhuleni libraries. This was done by first examining the membership status of each participant in the library management system. Although this approach limited the study to active registered library user only, the researcher felt that this was the most relevant approach to be used, considering the costs in terms of time and resources which would have been incurred had self-administered questionnaires or interviews been used to collect data. The researcher also contacted each participant telephonically prior to sending questionnaires, to determine their literacy (including ICTs literacy) level in relation to understanding and completing questionnaires. Questionnaires were used for library users, while interviews were held with control librarians.

3.5.1 Questionnaire

A questionnaire is a research instrument used by researchers to collect mostly quantitative data. Neuman (2000) defines a questionnaire as “a quantitative technique intended to express its findings in figures”. It is the most commonly used form of survey when collecting original

quantitative data (Constable 2007: 46). It has the following advantages over interviews and other data collection tools:

3.5.1.1 Advantages of mail (email) questionnaires

Cheap to administer: Researchers can give and mail questionnaires directly to the respondents who read instructions and questions and then provide answers. Being the far cheapest method of collecting data, questionnaires can be administered by a single researcher, and can be sent by the researcher to a wide geographical area (Neuman 2000: 271).

Convenience: Respondents have ample time to complete questionnaires at their own pace. (Neuman 2000: 271; Kumar 2011: 148).

Offer anonymity and avoid interviewer bias: When conducting a research, most of the respondents would like to remain anonymous for various reasons such as their safety. Therefore, using questionnaires ensures that respondents' identity remain unknown (Babbie 2010: 148). Meanwhile, the interviewer bias in research can attack the integrity of the facts (Leedy & Ormrod 2005: 209). For instance, when conducting an interview, the interviewer's personality may affect the responses of the interviewee. In asking questions, the researcher's tone of voice or the inflection or emphasis within the sentence may influence how a respondent replies (Leedy & Ormrod 2005: 209). Therefore, using a questionnaire ensured that such bias did not creep into a research project during the data collection phase.

High response rate: Mail questionnaires are considered to be effective and are likely to have high response rate for a target population that is well educated or has a strong interest in the topic or the survey organisation (Neuman 2000: 271). It is without doubt that in conducting an academic research, costly techniques should be avoided, as budget and time constraints are most likely to creep up and derail the study. Meanwhile the researcher also needs a technique that would allow convenience in terms of time so that participants could have ample time to respond and at their own pace, which contributes to a high response rate. The researcher also needs to create an environment in which participants feel free to respond, knowing that their anonymity is guaranteed. This encourages them to give honest and detailed responses or

answers to the questions. Therefore, the above advantages benefitted this study in the following ways:

- In using the mail questionnaire (email) the researcher did not need additional personnel to administer them, but he collected data alone with minimal help from participating libraries that provided names of registered users from their databases, and this saved costs in terms of money and time, which could have been incurred had any technique been used.
- The fact that people were given enough time (3 weeks) to respond, allowed them to answer questions at the time convenient for them. This ensured that questionnaires were fully completed, and contributed to a high or adequate questionnaire response rate.
- The fact that people's identities were not going to be revealed eliminated people's fear to participate in the study, and encouraged them to provide detailed and honest answers to questions asked, knowing very well that they were not going to be targeted or reprimanded for their views. This was crucial for this study, as it needed detailed and honest answers in order to contribute to findings that were reliable.

However, despite the above positive advantages, questionnaires have a number of disadvantages. The following are some of the disadvantages of questionnaires (both mail and self-administered) as data collection tools in research:

3.5.1.2 Disadvantages of mail (email) questionnaires

Low response rate: Questionnaires are likely to have a low response rate as most people hardly complete and return them. Consequently, this can negatively affect the whole research, as low response rate can negatively affect the findings (Kumar 2011: 149).

Lack of control and incomplete questionnaires: The fact that questionnaires are completed by the respondents while the researcher is not present to clarify questions or probe for more information result in the researcher not having control over the process or the likelihood of

respondents giving incomplete answers. Consequently, the result of the study may be skewed (Neuman 2012: 194).

Limit the questions that one can use or ask: The researcher is limited to using closed-ended questions as open-ended, contingency and complex questions do poorly especially in mailed questionnaires (Neuman 2000: 194). This research tool is also applicable to a study population that can read or write, while irrelevant to illiterate, very young, very old and handicapped people (Kumar 2011: 149).

Researchers cannot visually observe the respondent's reaction to questions, physical characteristics or setting: It is natural for people to lie about their identity, physical characteristics or their setting. For instance, a 50-year old female respondent may deliberately say that she is a 16-year old girl and there is no way that the researcher may detect such a lie. The same can apply to an unemployed African male who can falsely state that he is a white male doctor or prosecutor. These misrepresentations of data in research could result in serious errors occurring, thus negatively affecting the findings of the study (Neuman 2000:272).

Self-selecting bias: There is a danger of bias. If, for instance, people who return questionnaires have similar attitudes, attributes or motivations that differs from those who did not respond, conclusions made will only be based on views and feelings of those who responded (Kumar 2011: 149).

In order to overcome or minimise the above disadvantages, the researcher ensured that, instructions and questions were clear to all participants, as unclear instructions and questions would have contributed to people not responding to questionnaires, thereby resulting in questionnaires low-response rate. The covering letter also included a statement on the purpose of the study, and how the study would benefit them. This, in turn, encouraged participants to be honest when responding to questions asked.

3.5.1.3 Structure of the questionnaire

Mavodza (2010: 112) states that the order of the questions in the questionnaire can have an impact on the accuracy of responses. Slater (1990) and Powell and Connaway (2004) suggest

that questionnaires should start with more general questions, as this result in respondent feeling at ease, followed by the more specific kind of questions. Powel (1997) stresses that the format of the questions used in the questionnaire is determined by the information desired. These can be open-ended or closed-ended (Powell 1997; Powell & Connaway 2004; Slater 1990). The questionnaire in this study consisted of mainly closed-ended questions, while few were open-ended. There were seven sections and 28 questions in the questionnaire designed to collect data for the study.

When formulating questions for the questionnaire, the main objectives of this study were taken into consideration. A structured, unambiguous questionnaire was designed and used in order to obtain relevant data on the utilisation of ICTs facilities in EMM libraries. The sequence and wording of each survey question in questionnaires remained the same for each respondent. Some of the questions in the questionnaires were adapted from similar studies by Eve and Brophy (2000) and Chaplin (2002). The questionnaire consisted of mainly closed-ended questions on age, gender and frequency of library use, with only two questions, which were qualitative in nature. Those closed-ended types of questions were used to gather quantitative data. According to Chaplin (2002), such types of questions allow a greater scope for data analysis. These questions were preferred because: (i) it is easier and quicker for respondents to answer, (ii) answers of different respondents are easier to compare, (iii) answers are easier to code and statistically analyse, (iv) respondents' choices can clarify questions meaning for respondents, (v) respondents are more likely to answer about sensitive topics, (vi) there are fewer irrelevant or confused answers to questions, (vii) and replication is easier (Neuman 2000: 261; Mc Burney 2001: 239).

The questionnaire in this study used a clear and understandable language, and was short and gave a clear instruction to the respondents. The following principles as stipulated by Neuman (2000: 253) were adhered to or considered to ensure that questionnaires met the required standard:

Avoid jargon, slang and abbreviations: The researcher ensured that the questions consisted of easy to understand language and grammar, and specialised terms and abbreviations were avoided. Jargon and slang were also avoided as the population was too general (consisted of general library members) and not specialised group of people.

Avoid ambiguity, confusion and vagueness: The researcher avoided using questions that were not clear and have more than one meaning, as this would confuse respondents.

Avoid emotional language and prestige bias: Questions were constructed in such a way that people's answers were not based on their feeling towards the issues in question, but on addressing the issues themselves. Prestige bias occurs when respondents answer based on their feelings towards the person or group than addressing the issue.

Avoid double-barrelled questions: Neuman (2000: 252) defines a double-barrelled question as the one that consists of two or more questions joined together. Attempts were made to ensure that each question was about one and only one topic. For instance, instead of asking, "what are the main uses" and "benefits of ICTs in libraries", each question was asked separately to ensure that respondents were not confused when answering the question(s).

Avoid leading questions: A leading question is the one that leads the respondent to choose one response over another by its wording. For instance, question like "You do not use library computers, do you?" were avoided, as the researcher felt that this kind of question could have led the respondent to state that they do not use library computers.

Avoid asking questions that are beyond respondents' capabilities: The researcher ensured that questions were at the level of respondents' knowledge and capabilities to ensure that they were not frustrated, which is the case when they are asked questions beyond their comprehension.

Avoid false premises: The researcher avoided beginning a question with a false premise with which respondents may not agree, then ask about choices regarding it, as this could have led to respondents who did not agree with the premise being frustrated and not know how to answer.

Avoid asking about future intention: The researcher ensured that questions were about recent attitudes and behaviour rather than asking people hypothetical questions that are beyond their immediate experiences.

The questions were discussed with a statistician, in order to check whether they would extract the required responses. Thereafter, questions were grouped according to seven sections, which mainly used “Mark with an X” question format, and were presented as follows:

Section A: Demographics: These questions required information on age, gender, qualifications, employment status and ethnicity of respondents.

Section B: Use of ICTs facilities in libraries: Needed information on ICTs use in EMM libraries. These included extracting information on which ICTs facilities are used in the libraries, who uses the facilities, how often are the facilities used as well as the reasons behind the use of such facilities.

Section C: Attitudes of users towards ICTs provision: Sought information on how ICTs facilities are viewed by users of public libraries.

Section D: Library users’ ICTs preferences: Sought information on users’ ICTs preferences in public libraries.

Section E: Accessibility of public libraries’ ICTs: Required information on whether ICTs facilities in public libraries were accessible to library users or not.

Section F: Users’ knowledge and skills, and availability ICTs’ training programmes: Sought information on whether library users had knowledge and relevant skills that would make it possible for them to use the ICTs facilities available in the libraries or not. Also intended to find out if library users received training on how to use ICTs in the libraries or not.

Section G: Challenges experienced by users in utilising ICTs in public libraries: Sought information on the nature of challenges that library users experienced when using libraries ICTs facilities as well as getting possible answers on how such challenges could be alleviated.

3.5.1.4 Questionnaire administration

The questionnaires, which consisted mainly of closed-ended questions, were e-mailed to individuals selected for the study from each of the participating libraries. Prior to that, the Director of Library and Information Services was approached by the researcher for permission to conduct the study (see Appendix B). To ensure that questionnaires were emailed to the relevant target group (registered library users), staff members in participating libraries had to confirm the membership status of those selected for the study, and further correspondences were entered into with those registered. Those members who were not registered were left out of the study, with the purpose of minimising errors that would have occurred in a situation where questionnaires were sent to non-registered library members.

A letter was then attached to the questionnaires, requesting users to complete and return questionnaires to the researcher's email addresses within three weeks of having received them. This was to ensure that people had ample time to complete questionnaires. Most importantly, this was done to ensure a high questionnaires response rate. If people did not know when and where to return questionnaires, it would have taken them a long time to respond, or that they would not have responded at all. This would have delayed this study, and could have contributed to a low questionnaire response rate. The covering letter, which was attached to the questionnaire, as already mentioned above, had an explanatory note detailing the aim of the study. The covering letter was written in a simple and clear language that was easy to understand, in an effort to encourage a high response rate.

3.5.2 Interviews

Neuman (2000: 276) considers an interview to be a "short-term, secondary social interaction between two strangers, with the explicit purpose of one person obtaining specific information from the other". According to this author, it involves social roles, norms and expectations for both the interviewer and interviewee. Interviews are an important part of any research project, as they provide the opportunity for the researcher to investigate further, to solve problems and to gather data, which could not have been obtained in other ways (Cunningham, 1993: 93). According to Creswell (2007), a protocol for an interview is important, and its components include a heading; instructions to the interviewer; the key

research questions; probes to follow key questions; transition messages for the interviewer; space for recording the interviewer's comments; and space for recording reflective notes.

For the purpose of this study, telephone interviews were preferred in gathering data from the control librarians of the sample libraries. The preference for this data gathering tool, in this instance, was because the sample size was small (only 8 respondents) and manageable to interview. Nevertheless, the geographical distance between sample libraries also informed the researcher's decision to use telephone interviews than face-to-face interviews. Had the researcher used face-to-face interview, high travelling costs would have been incurred, as libraries were geographically located far away from each other. The researcher felt that the interview was the most appropriate method of getting information from this target group based on the following advantages:

3.5.2.1 Advantages of telephone interviews

High response rate: A telephone interview is likely to have a high response rate than any other data collection method, as individuals are directly asked questions and answers given on the spot (Neuman 2000: 272).

Questions can be clarified: With a telephone interview, the researcher has the opportunity to clarify questions that are misunderstood by the respondents as well as probe for further answers. This is not the case when a questionnaire is used to collect data (Neuman 2000: 272; Kumar 2011: 150).

Wider application: Interviews can be used with almost every type of population, be it children, handicapped, illiterate or very old (Kumar 2011: 150).

3.5.2.2 Disadvantages of telephone interviews

The main disadvantages associated with telephone interview are the limited interview length and the high costs associated with making calls. The costs involve the telephone bill incurred during the interview, especially when many people have to be interviewed (Neuman 2000: 272). The other problem has to do with interview bias, which happens to be the main drawback of telephone interviews (Neuman 2000; Kumar 2011: 150). There is no anonymity,

and the way in which the interviewer asks questions can affect the respondents to such an extent that he/she may feel threatened and intimidated. This can influence the way he/she gives answers to questions asked. The other disadvantage of telephone interview is that respondents without telephones are difficult to reach, which can result in a low response rate (Neuman 2002: 272).

However, the interviewer in this study did not experience challenges above considering that all eight control librarians were directly interviewed through their work telephones during their normal working hours. The fact that there were few people to be interviewed also minimised the costs that would have been incurred had many people been interviewed.

3.5.2.3 Structure of the interviews

As already mentioned above, the telephone interview protocol (see Appendix E) with open-ended questions was used in this study to get responses from the control librarians. Some of the interview questions closely resembled those used in the structured questionnaire, but responses were not provided, allowing interviewees to elaborate on their open responses. There were a total of six (6) questions for the interview. The interviewer asked questions and recorded the answers. Each of the interview sessions with control librarians lasted for a maximum of twenty minutes.

3.6 Measurement of validity and reliability

Validity in research entails establishing the trustworthiness, quality and accuracy of the procedure adopted for finding answers to research questions. There is a probability of inaccuracy occurring at any stage of the research process; hence, it is critical for the researcher to validate if the research investigation is providing answers to the research questions for which it was undertaken, and if it is providing the answers using appropriate methods and procedures. When considering validity in quantitative terms in research, it is a test of whether the data we collect accurately helps us achieve what we are trying to measure. In other words, the data should be able to endure the scrutiny of other researchers. In qualitative terms, validity refers more to the trustworthiness of the research (Checkland & Holwell 1998). Checkland and Holwell (1998) and Mavodza (2010: 97), further pointed out that writing accurately also enhances the validity of the study.

The concept reliability means that when a phenomenon is measured under a different condition, the results yielded must be the same. According to Neuman (2000), the following are the different types of reliability: stability reliability, representative reliability, equivalence reliability. It is impossible, when conducting research, to achieve perfect validity and reliability. According to Ngulube (2005), the reliability of the research is also dependent on the validity of the research instrument used. In this study, the research instruments used included a questionnaire and an interview.

3.6.1 Pre-testing of research instruments

According to Babbie (2010: 267), there is always the possibility of an error when a researcher designs a data collection tool or instrument, no matter how careful the researcher can be, hence pre-testing is essential. This view is also held by Kumar (2011: 158) who observes that pre-testing of questionnaires before an actual study is conducted is essential, in order to refine the questions. The same author pointed out that until questionnaires are pre-tested with respondent, it becomes difficult to determine if they will achieve the desired results, hence one needs to identify mistakes in questionnaires before a full-scale study is conducted. Kumar (2011:158) pointed out that the researcher needs to conduct pre-testing of data collection instruments (questionnaires in particular) in order to:

- Determine whether the questions, as they are worded, will achieve the desired results.
- Determine whether the questions have been placed in the best order.
- Determine whether the questions are understood by all classes of respondents.
- Determine whether additional or specifying questions are needed or whether some questions should be eliminated.
- Determine whether the instructions used are adequate.

For the purpose of this study, pre-testing was necessary to determine the effectiveness of the questionnaires in producing responses that would provide meaningful, relevant and accurate answers to this study. A small number of 40 respondents (5 per library) were selected for a pilot survey and broadly represented the type of respondents to complete questionnaire in the full-scale study. All the 40 respondents for a pilot study were registered users of EMM libraries by the time pre-testing was conducted. Although there seems to be an absence of

literature that recommends the appropriate number of respondents required for pre-testing, it is suggested by Bradburn, Sudman and Wansink (2004: 317) that at least ten to twelve individuals representing the actual study population should be considered for pre-testing. The result of pre-testing revealed that the questionnaires were well constructed, with questions clearly arranged according to relevant themes. However, few adjustments were made in relation to the wording of some questions. Interview questions were also pre-tested with selected control librarians and were found to be yielding answers that truly reflected the objectives of the questions asked. After the pre-testing, the researcher was able to construct easier, less complicated research tools that were appropriate for the full-scale or actual study.

3.7 Ethical considerations

The ethical issues in this study were dealt with variously as outlined below:

Getting permission from authorities to conduct study with participants at research sites: According to Unisa Policy on Research Ethics (2007), one must avoid undertaking research in secret, and that there must always be a sense of accountability and responsibility and respect for human participants when conducting research. In this study, a letter was written to the Director of Library and Information Services and permission was granted for the researcher to conduct the study with participants (See Appendix B and C).

Adherence to rules of confidentiality and privacy as they relate to individuals, groups participating and contributing to the purpose or aspects of the study: According to Unisa Policy on Research Ethics (2007), when dealing with people as research subjects, they need to be informed of what the study intends to achieve so that they do not feel exploited. While their anonymity should be guaranteed, participants' right to abstain from participating in the research and their right to terminate at any time should be emphasised. In line with this guideline, participants' anonymity in this study was guaranteed, and their names were not requested for the purpose of this study. This was made clear in the questionnaire, where assurance was given that their identities would remain anonymous (See Appendix D). Respondents were also assured that the information provided by them would only be used for the purpose of this study and will not be used against them in the future. This was intended to make them feel free to participate in the study. Participants were also notified prior to the

study of their right to abstain from the study or terminate the study whenever they felt they needed to.

Do not put participants at risk, and respect vulnerable populations: Creswell (2003:64) emphasised the need for researchers not to put people who are participating in the study at any form of risk. In line with this guideline, the researcher in this study ensured that the participants signed an informed consent form before they participated in the study as a guarantee that they were not forced to participate in the study, but were doing it voluntarily. This is the practise necessary to determine participants with special needs, to assess any legal, psychological or physical harm and others (see section D).

Acknowledgement of copyrights sources and sponsors where applicable: Neuman (2000: 91) emphasises the need for the researcher to properly acknowledge sources used during the study. According to this author, stealing other people's ideas or writings without acknowledging them constitutes an unethical conduct and is called plagiarism. In this study, the researcher ensured that all sources or works published by other authors were properly acknowledged using the Harvard referencing style.

3.8 Evaluation of the research methodology

This is an evaluation of both the quantitative and qualitative methods as part of the research methodology adopted in this study. The sources of data in the study included questionnaire for public library users and interview for library staff. This methodology was preferred because it is most appropriate in situations where data to be collected is both in the form of numbers and words. Eve and Brophy (2000), Neuman (2000) and Leedy and Ormrod (2005) also hold this view as they observe that quantitative research is most relevant when collecting statistical information. Such information, in relation to this study, provides a general pattern of ICTs use, what ICTs facilities are used and by whom are such facilities used. Qualitative research, in the meantime, answered questions such as why people used the ICTs services. The design of the study was in the form of a survey and literature review. According to Neuman (2000), surveys are most appropriate when studying aspects such as beliefs and people's attitudes and opinions, while literature review was necessary to put the study in its

proper context by identifying and analysing various issues in the literature that are relevant to this study.

The use of a questionnaire as a data collection instrument was also appropriate for this study, considering the limited time that the researcher had to conduct the study. Interviewing every participant would have been time consuming and expensive for the researcher, as he would have had to arrange time, date and place to meet each participant. This also applies to the use of interview to gather data from staff, as telephone interview ensured that the researcher's time and costs were saved in collecting data.

The pre-test conducted enabled the researcher to assess whether the questionnaire was relevant to and easily understood by the respondents. After pre-testing, the researcher found that it was not necessary to revise the structure (order of the questions) of questionnaires, rephrase questions or delete certain questions in order to add new ones. All the questions were found to be appropriate for the study, although few adjustments on the wording were done. Thereafter, the final version of the survey questionnaire was compiled.

3.9 Summary

In this chapter, the choice of appropriate research method used to conduct the study was explained. The researcher also justified the sampling techniques used as well as explained the procedure followed in selecting the sample for the study. The advantages and disadvantages of the most appropriate data collection tools used in the study, namely: survey questionnaire (for libraries users) as well as interview (for control librarians), were explained. The various ethical issues considered when undertaking the study were briefly explained. The fourth chapter will focus on the analysis and interpretation of data obtained from both questionnaires and interviews.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The previous chapter dealt with the research methodology and approaches used in conducting this study. This chapter analyses, presents and interprets the results of the data obtained from the library users' questionnaires and staff interviews. The first part of this chapter deals with the findings from user questionnaires, and focuses on the profiles of respondents in terms of certain demographic variables, which helps to provide a context for the results. This section also focuses on the use of ICTs by the respondents, with the main emphasis being on aspects such as "which ICTs are in use", "how often are ICTs used", "reasons for ICTs use" as well as "reasons for non-use" in case the facilities are found not to be utilised. It also focuses on users' attitudes towards ICTs provision, users' ICTs preferences in the libraries, accessibility of ICTs to users of libraries, users' ICTs knowledge and skills, users' ICTs training in libraries, and finally, the challenges that users experience in using ICTs in Ekurhuleni libraries. The second part, which deals with the findings from staff interviews, sought information on the types of ICTs that are available in EMM libraries, availability of users' ICTs training programmes in EMM libraries as well as challenges experienced by users when using ICTs in the libraries.

4.2 Presentation of findings

4.2.1 User questionnaire

It was noted in Chapter One, that the main aim of this study was to assess the utilisation of ICTs in EMM public libraries by the users. A total of 332 questionnaires were emailed to registered users of EMM libraries to seek their views on their usage of ICTs in libraries, ICTs training they have received in EMM libraries, challenges they experience in using ICTs in libraries and other related issues, which are already mentioned in section 4.1. Overall, 170 of the 332 distributed questionnaires were returned, meaning that the response rate for the questionnaires received and analysed was 51%. Although the study did not receive a high response rate that was hoped for, this response rate is still considered adequate enough for

the researcher to draw conclusions from, considering that mail questionnaires are commonly known to have a low response rate (Neuman 2000: 268). According to Neuman (2000: 268), a response rate of 10 to 50 percent is most common for mail surveys. This view is also held by McBurney (2001: 245), who argues that mail surveys have a low questionnaire response rate. Although the percentage of these two authors differs, in terms of mail survey's response rate, they share the view that mail surveys are most likely to have a low response rate. It is on this basis that the researcher is convinced that a 51% response rate is quite reasonable for this study. According to Neuman (2000: 267), a response rate is considered poor if it is below 50%, while that which is over and above 90% is considered excellent. Therefore, based on these arguments, one is justified to draw conclusions from users' questionnaires received. The overall questionnaires response rate for this study is displayed in Table 4.1

Table 4.1: Percentage of questionnaires responses per library

Library	Distributed	Returned	Percentage %
Actonville	41	26	15%
Benoni	42	19	11%
Boksburg	42	22	13%
Brakpan	42	15	9%
Edenvale	42	32	19%
Germiston	42	16	9%
Reiger-park	41	22	13%
Tembisa -West	40	18	11%
Total	332	170	100%

It is clear from the above table that a high proportion 32 (19%) of respondents were from Edenvale library, followed by Actonville 26 (15%), Boksburg 22 (13%) and Reigerpark 22 (13%) libraries respectively. Meanwhile, response rates from other libraries were as follows: Benoni 19 (11%), Tembisa–West 18 (11%), Germiston 16 (9%) and Brakpan 15 (9%) as it appears in Table 4.1

4.2.1.1 Demographic profiles of respondents

Table 4.2 Demographic profiles of respondents

Variables	Scaled responses	Number of respondents	Percentage %
Gender	Male	102	60%
	Female	68	40%
Total		170	100%
Age category	Between 13 and 17	8	5%
	Between 18 and 25	61	36%
	Between 26 and 34	48	28%
	Between 35 and 40	34	20%
	Above 40	19	11%
Total		170	100%
Qualifications	Diploma	60	35%
	Degree	37	22%
	Honours	15	9%
	Masters	4	2%
	PHD	1	1%
	Other (Grade 12)	53	31%
Total		170	100%
Employment status	Employed	78	46%
	Unemployed	75	44%
	Self-employed	17	10%
Total		170	100%
Ethnicity	African	137	81%
	Indian	3	2%
	Coloured	16	9%
	White	14	8%
	Other	-	-
Total		170	100%

In terms of gender, the majority of respondents were males who constituted 102 (60%) of the total response rate compared to females who constituted 68 (40%) of total response rate.

In looking at the age group, a high proportion of respondents 61 (36%) in the study were between ages 18 and 25, followed by those aged between 26 and 34, 48 (28%). These were followed by those between ages 35 and 40, 34 (20%), above 40, 19 (11%), and between 13 and 17, 8 (5%) respectively.

In terms of qualifications, most respondents 60 (35%) possessed a diploma, while those with “other” qualifications (Grade12) came second, constituting 53 (31%) of respondents. Meanwhile, those with a degree 37 (22%), honours 15 (9%), masters 4 (2%) and PHD 1 (1%) came third, fourth, fifth and sixth respectively.

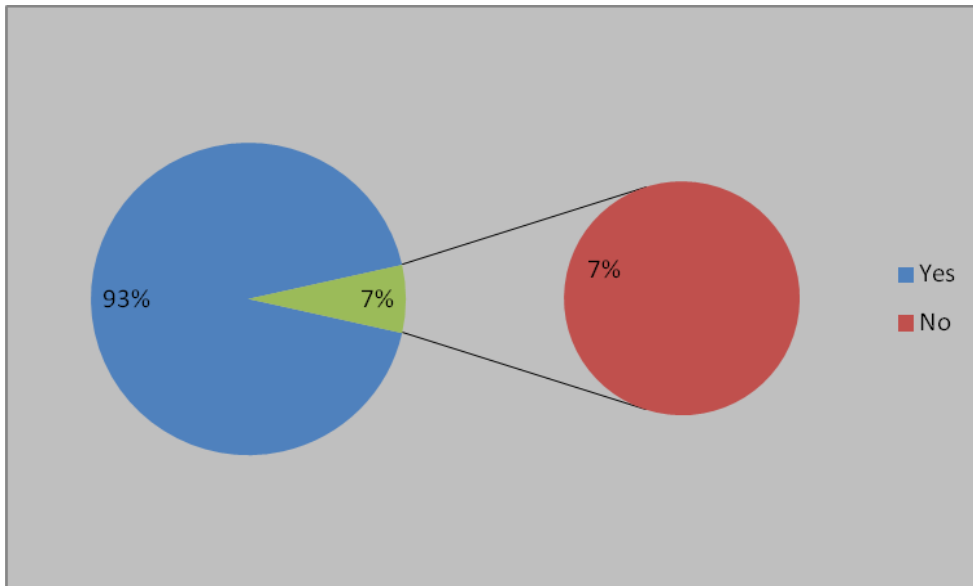
The employment category status of respondents shows that 78 (46%) of them were employed, while 17 (10%) were self-employed. The rest (75 or 44%) of the respondents were unemployed.

In terms of ethnicity, the study found that 137 (81%) of respondents were of African descent, while Coloureds respondents were 16 (9%). Whites and Indians respondents were only 14 (8%) and 3 (2%) respectively. These demographics reflect the overall South Africa’s population dynamics, which show the dominance of people of African descent (blacks) in the country (Statistics South Africa 2011: 9).

4.2.1.2 Use of information and communication technologies at Ekurhuleni libraries

One of the objectives of this study was to determine the utilisation of ICTs in Ekurhuleni libraries. The researcher sought to get answers to questions such as “which ICTs are in use in EMM libraries”, “how often are ICTs used” as well as determining the “reasons for ICTs use and non-use” in case facilities were found not to be used. In order to get relevant answers to these questions, respondents were first asked to indicate whether they used ICTs available in public libraries in Ekurhuleni or not. A total of 158 (93%) respondents indicated that they used ICTs in libraries, compared to 12 (7%) respondents who did not use them. Figure 4.1 presents the finding in this regard.

Figure 4.1: Use of ICTs in the libraries

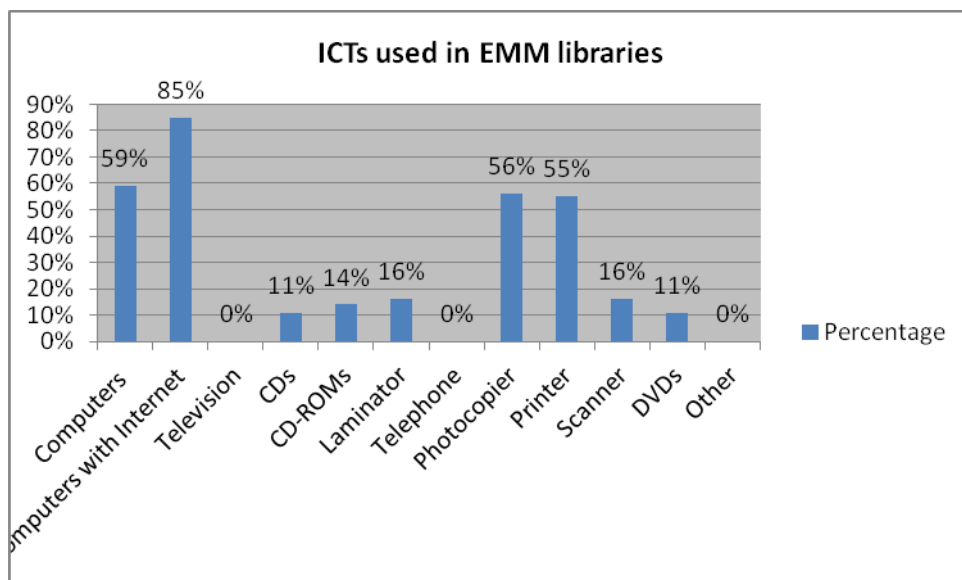


Do you use ICTs in the library?

The fact that 12 (7%) of users did not use ICTs in libraries is a worrying factor, considering that most of the information in libraries today is available electronically. Therefore, it is critical for library management to determine reasons why other users were not using ICTs facilities in libraries in order to come up with corrective measures, where necessary, to get facilities effectively used.

Respondents who used ICTs in libraries were then requested to indicate the facilities (as many as applicable from the list provided) they used. Figure 4.2 presents the findings of the study in terms of which ICTs respondents used in Ekurhuleni libraries:

Figure 4.2: ICTs used by respondents in the libraries (N=158)



It is without doubt that all ICTs listed in Figure 4.2 (except telephones and Televisions) were in use in the libraries, although computers with Internet, computers, photocopiers and printer were highly utilised than others. While computers with Internet were used by 145 (85%) of respondents, computers and photocopiers were used by 101 (59%) and 95 (56%) of respondents respectively. Meanwhile, printers were used by 93 (55%) of respondents, while the rest of the facilities were either not much used or not used at all, as it appears in Figure 4.2. It is, therefore, without doubt that computers and their Internet-based facilities, as well as auxiliary services such as photocopiers and printers are highly utilised in Ekurhuleni libraries compared to other ICTs such as scanners, laminators and others appearing in figure 4.2. This trend seems to be in line with the findings by Becker et al. (2010), Bertot, McClure and Jaeger (2007) and Maswabi et al. (2011) in their studies, as they found that computer and their Internet-based ICTs facilities were highly utilised in public libraries.

The high usage of computers and computers with Internet could be attributed to the high demands and availability of information electronically in libraries today. Hence, these facilities are seen as tools through which such information could be easily retrieved for use. The fact that computers, computers with Internet, photocopiers and printers were highly utilised means that more money should be invested in such facilities so that users' ICTs needs in those areas could be met. Meanwhile, attention should be given to those facilities that are not utilised to find out why they are not used.

When asked to indicate whether they used ICTs a) daily, b) once a week, c) more than once a week or d) once every two weeks, (with respondents having more than one option to choose from) a high proportion of ICTs users were found to be using the facilities "more than once a week" compared to those who used the facilities some other times indicated in Table 4.3. For instance, 89 (52%) and 63 (37%) of respondents used computers and computers with Internet "more than once a week" respectively, and this was the case with other ICTs facilities use, as it can be seen in Table 4.3. What is interesting is that none of the respondents used the facilities "daily", which could be attributed to factors such as: "respondents also having access to the facilities at home", "not having enough time to visit libraries daily due to work commitments or due to challenges associated with accessibility of ICTs facilities among others factors. Therefore, there seems to be some consensus between these findings and that of Chaplin (2002) who found that most of respondents who used ICTs in libraries used the

facilities often. This, according to the author, was attributed to users having no other ICTs access points apart from libraries, particularly for users staying in disadvantaged communities. Table 4.3 shows the frequency of ICTs use by respondents in the libraries.

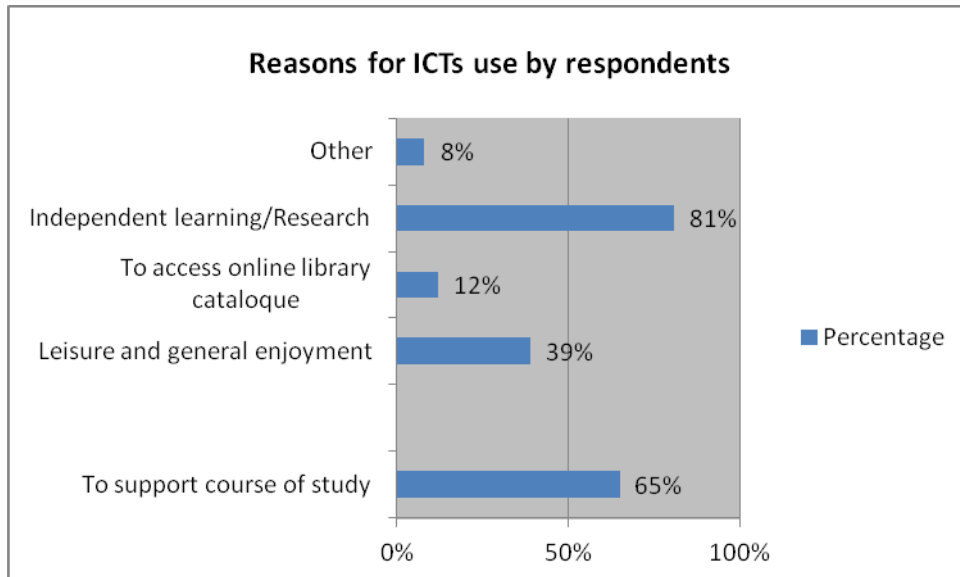
Table: 4.3 Frequency of ICTs use by respondents (N=158)

Frequency of use				
Facility	Daily	Once a week	More than once a week	Once every two weeks
Computers	-	28 (16%)	89 (52%)	14 (8%)
Computers with Internet	-	29 (17%)	63 (37%)	11 (6%)
Television	-	-	-	-
CDs	-	3 (2%)	17 (10%)	2 (1%)
CD-ROM	-	5 (3%)	14 (8%)	7 (4%)
Laminator	-	1 (1%)	15 (9%)	7 (4%)
Telephone	-	-	-	-
Photocopies	-	30 (17%)	35 (21%)	25 (15%)
Printer	-	22 (13%)	40 (26%)	14 (8%)
Scanner	-	5 (3%)	16 (9%)	7 (4%)
DVDs	-	5 (3%)	8 (5%)	2 (1%)
Other	-	-	-	-

Respondents were also asked to provide their reasons for using ICTs in libraries, out of choice of: a) to support course of study, b) leisure/general enjoyment, c) to access online library catalogue, d) independent learning and e) “other” reasons. Multiple responses were expected in answering this question. In the literature review, various studies showed that ICTs were used for a variety of reasons in public libraries. Eve and Brophy (2000), for instance, found that a high proportion of ICTs users in public libraries used ICTs mainly for study and research purposes, although “leisure and general enjoyment” were among other reasons for ICTs use. Nkanu and Okon (2010) found that in Nigeria, public libraries ICTs facilities were used as tools necessary in meeting the informational, recreational and educational needs of the users. In this study, respondents who used ICTs gave reasons, which

were diverse and seemed quite proportionately spread across diverse activities mentioned in Figure 4.3.

Figure 4.3: Reasons for ICTs use by respondents (N=158)



This study found that 138 (81%) of respondents used ICTs for “research” while 110 (65%) used ICTs “to support course of study” compared to other reasons mentioned in Figure 4.3. The fact that a high proportion of usage related to study and research purpose gives an impression that the majority of EMM libraries ICTs users were students. The study also found that there were also those who were using ICTs for “leisure and general enjoyment” 67 (39%), as well as those who used them to “access online library catalogue” 20 (12%). A small percentage 14 (8%) of replies fitted into the “other” category, with the main uses being job-related (either seeking work from the Internet or using facilities for work-related purposes), and keeping in touch with family and friends (using e-mail). Therefore, it is evident that the reasons for ICTs use in Ekurhuleni libraries are diverse and in line with each individual user’s needs. This is not surprising, if one has to consider that users have different needs, necessary to address particular situations in their daily lives, and ICTs are seen as relevant tools through which such needs could be met. In the meantime, the low percentage 20 (12%) of respondents who used ICTs “to access online public access catalogues” could be attributed to the fact that very few libraries in Ekurhuleni have such facilities, as searches for information sources are mainly done by librarians on behalf of users.

Meanwhile, the researcher also needed to find answers to why some of the respondents did not use ICTs facilities in libraries. Although this was not an objective of this study, finding such answers would help libraries to put in place mechanisms that would encourage non-users of ICTs in libraries to become future active ICTs users. Respondents had more than one option to answer this question. In reviewing the literature, a variety of factors were found to be contributing to non-use of public libraries ICTs. Eve and Brophy (2000), for instance, found that the main contributing factor was users “having access to ICTs elsewhere apart from libraries”, users “lack of knowledge and skills of how to use the facilities”, “lack of interest in using public libraries ICTs” and “insufficient ICTs in libraries”. Chisenga (2006) and Were (n.d.) found that similar factors above were contributing to non-use of ICTs in African public libraries. According to these authors “lack of knowledge about the opportunities offered by public libraries ICTs facilities, coupled with libraries users’ lack of computers and other ICTs skills contributed to non-use of public libraries ICTs facilities.

The findings of this study are almost a reflection of the above, as “having access to ICTs elsewhere apart from the libraries”; lack of interest in using ICTs in libraries, “insufficient ICTs facilities” as well as “lack of knowledge and skills of how to use ICTs in libraries” were also found to be reasons for non-use of ICTs by respondents.

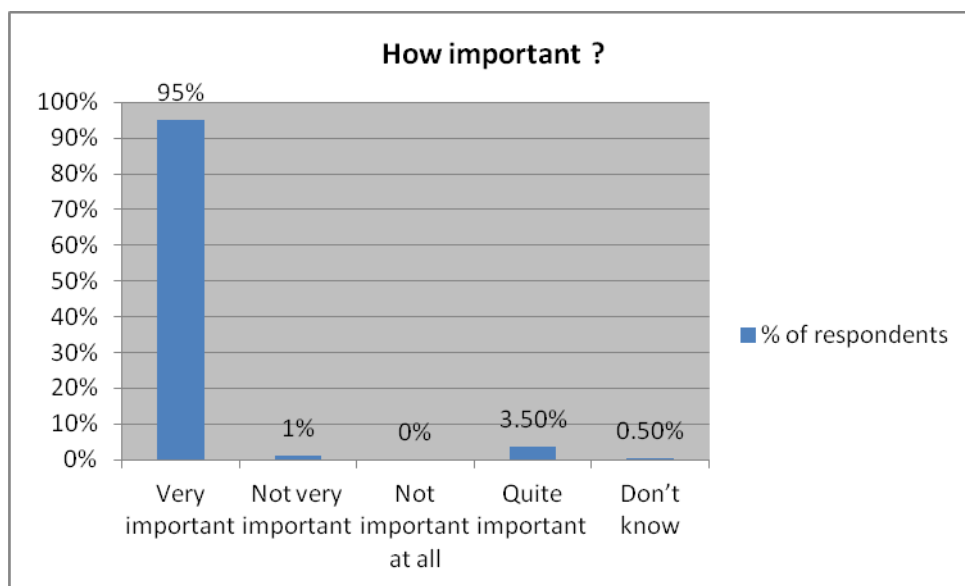
These results show that it is not only those without knowledge and skills of how to use the facilities who do not use ICTs in libraries, but also those who have access to the facilities elsewhere apart from the libraries such as at home, cybercafés and work places. This finding is contrary to that of Chaplin (2002), who found that it was those without other points of ICTs access who were most likely not to use ICTs in public libraries as they find the facilities threatening to them. Therefore, libraries in Ekurhuleni should market their services, targeting mostly non-users of libraries ICTs, if they are to continue playing a role as one-stop information and ICTs access points.

4.2.1.3 Attitudes of users towards ICTs provision

The objective of this study was to find out about library users’ feelings and views on the importance of public libraries providing ICTs facilities. It was necessary to investigate this aspect because people’s attitudes and perceptions may influence the way in which ICTs are

used. All respondents were asked to rate the importance of public libraries providing ICTs. In reviewing the literature, Chaplin (2002) found that a high proportion (88.2%) of respondents thought it was “very important” for public libraries to provide ICTs, while 9.8% thought it was “quite important”. A study by Eve and Brophy (2000) also yielded similar results as 96% of respondents rated this “very important”. Meanwhile, Maswabi et al. (2011) found that the availability of ICTs at public libraries in Botswana have changed older people’s perceptions that ICTs were meant for students users. This resulted in older people’ attitudes towards ICTs changing, resulting in such people accommodating public libraries ICTs, and using them to address some of their daily needs. The finding of this study reveals a similar trend, because a high proportion 161 (95%) of respondents thought it was “very important” for public libraries to provide ICTs, while 6 (3.5%) thought it was “quite important”. Only 2 (1%) of respondents thought it was “not very important”, while 1 (0.5%) of respondents gave a “don’t know” response. The most striking finding was that none of the respondents thought it was “unimportant”, which confirm that respondents regarded the provision of ICTs in public libraries as critical in improving the quality of library services. Figure 4.4 illustrates these results more clearly:

Figure 4.4: Importance of public libraries providing ICTs

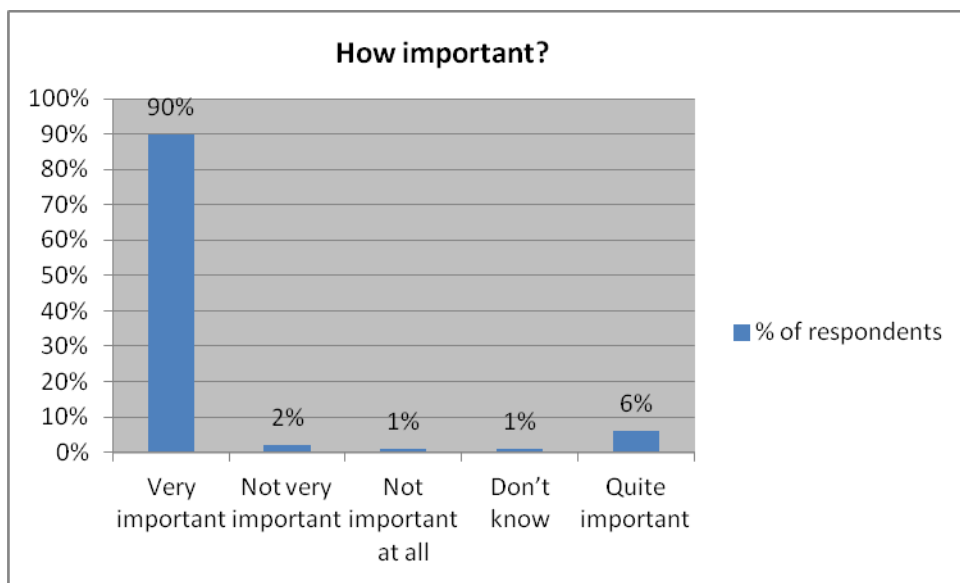


The high result for “very important” and “quite important” categories is not surprising considering that the majority of users used the ICTs in libraries. However, what is interesting is the level of importance placed on ICTs provision in libraries by even those 12 (7%) who did not use ICTs services themselves, as they also believed that it was “very important” for

public libraries to provide ICTs. Therefore, it appears as if there is a general realisation by respondents (even those who do not use ICTs in libraries at all) of the importance of ICTs in communities, and that they are a valuable resource for the community.

When asked to respond to the question “how important to you personally are public libraries ICTs?” most responses resembled those of the question above as most respondents 153 (90%) and 11 (6%) believed that the facilities were “very important” and “quite important” respectively, compared to 4 (2%) of those believing that they were “not very important”. Meanwhile 1 (1%) of respondents indicated that ICTs were “not important at all” while the remaining 1 (1%) gave a “don’t know” response. Therefore, there seems to be an acknowledgement of the importance of public libraries ICTs facilities by respondents in the study. Figure 4.5 illustrates the view of respondents in this regard.

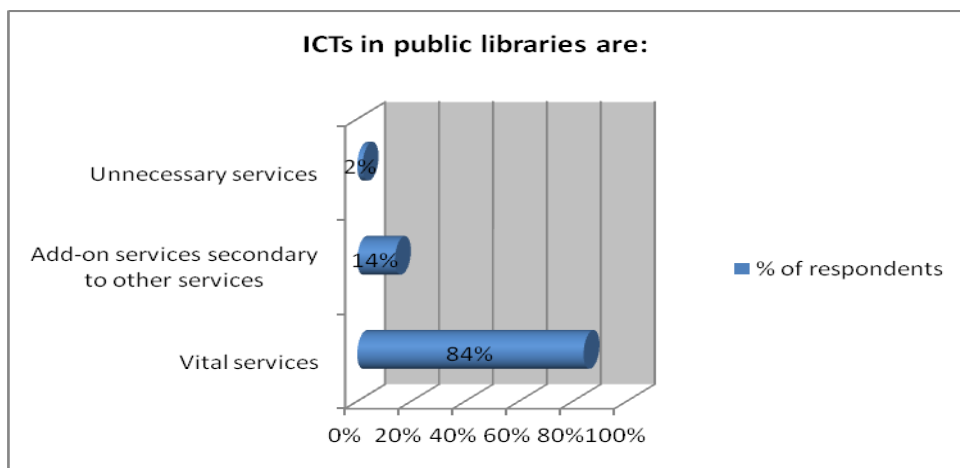
Figure 4.5: Importance of public libraries’ ICTs (N=170)



Respondents were also asked to indicate whether ICTs facilities were: a) vital services; b) add-on services, secondary to other library services; or c) unnecessary expenses. In the literature review, the study by Eve and Brophy (2001) found that ICTs services in libraries were considered by users to be “vital services”, while few respondents considered them to be either “add-on” or “unnecessary services”. The finding of this study reveals that a high proportion 143 (84%) of respondents considered ICTs to be “vital services” compared to those who felt that they were “add-on services” who constitutes only 24 (14%). Only 3 (2%) of respondents considered them to be “unnecessary expenses”. It is also interesting to note

that even those who were not users of ICTs in the libraries also shared the same view that such facilities were “vital services” in libraries. This view could be attributed to respondents’ realisation that these facilities have the ability to make information available to everyone in different format. Figure 4.6 presents the findings in this regard:

Figure 4.6: Respondents’ opinions of ICTs in public libraries



Based on these findings, one may categorically state that users of Ekurhuleni libraries have positive attitudes towards ICTs in libraries, and that such facilities are considered by users to be critical in ensuring that their diverse needs are met in an effective and efficient manner. The positive attitudes of users towards ICTs is critical for users’ continued reliance on ICTs in libraries, and this is good in supporting libraries’ continued investment on ICTs facilities. It is also worth noting that by having positive attitudes towards ICTs in libraries, ICTs users are most likely to influence non-users to use the facilities, as they would tell them of the benefits that are offered by such facilities. Nevertheless, libraries should never rest on their laurels, thinking that everything is fine and people will use the facilities forever because of their positive attitudes towards the facilities. People’s attitudes may change based on circumstances. For instance, if facilities are not maintained or serviced, positive attitudes may change into negative ones, hence continuous maintenance and upgrading of the facilities are critical for facilities to remain attractive and relevant in addressing users’ needs.

4.2.1.4: Library users’ ICTs preferences

It was also an objective of this study to determine libraries users’ ICTs preferences. This was based on the assumption that, although all ICTs services in libraries are considered “vital” by

users, some are more preferred and used than others. All respondents were asked to specify the ICTs facilities (as many as applicable) they preferred to use in public libraries. In reviewing the literature, it became clear that although a range of ICTs were in use in the libraries, computers and their Internet-based facilities were most preferred by users than other ICTs available in libraries. Studies by Bertot, McClure and Jaeger (2007) Bertot et al. (2008) Maswabi et al. (2011) and Chaplin (2002) had found that computers and their Internet-based facilities were preferred by the mainstream of libraries users.

Meanwhile, the findings of this study reveal similar trends, because computers and their Internet facilities were highly preferred, with 73 (43%) of respondents preferring computers, while computers with Internet were preferred by 154 (91%) of respondents (see Table 4.5). However, photocopiers and printers were also highly preferred by 87 (51%) and 58 (34%) of respondents respectively. This, however, is not surprising in view of the fact that most of the users used the facilities for academic related purpose, namely, for research and in supporting course of study, as already found in Figure 4.3. Therefore, computer and their Internet-related facilities, as well as auxiliary services, such as photocopying and printing were preferred because they had become effective tools through which study and research activities could be effectively carried out. Table 4.4 presents the findings in this regard:

Table 4.4: Library users’ ICTs preferences

ICTs preferences	No of respondents	% of respondents
Computers	73	43%
Computers with Internet	154	91%
Television	-	-
CDs	19	11%
CD-ROM	17	10%
Laminator	21	13%
Telephone	-	-
Photocopies	87	51%
Printer	58	34%
Scanner	41	24%
DVDs	16	9.4%
Other	-	-

It is worth mentioning that although computers and their Internet-based facilities were most preferred by users, there were still users who preferred laminators, DVDs CD-ROMs and CDs in libraries, though these facilities were least preferred. Again, one is not surprised about this finding considering that most of the usage is related to study and research, and computers and their Internet facilities are central and effective study and research tools, while photocopying and printing facilities play a supplementary role for both study and research. It is therefore necessary for libraries to ensure that there are sufficient ICTs facilities in those preferred ICTs categories to avoid a situation whereby users will compete for few available ICTs facilities, which in turn may discourage users from using these facilities.

When asked to elaborate on their reasons for preferring mainly computers and their Internet-based ICTs facilities, a variety of reasons were given, and these had most to do with the ability of the facilities to provide up to date information for research and study quickly. Some preferred the facilities because through them, communicating with families, friends and colleagues who stayed far away was made easier, while job searches and applications were also made easier if one had access to the Internet. The following are some typical responses from those who preferred certain ICTs facilities to others in the libraries:

Respondent 1

“I prefer these facilities because they are critical tools for research particularly the internet, while photocopiers and printers played a critical supplementary role during my study as I did not have all the necessary prescribed information sources”.

Respondent 2

“These facilities make a life of a learner much easier as one is able to find up to date information in the Internet which is currently not available in books”

Respondent 3

“I prefer computers with Internet because with these facilities life becomes easier and everything is possible, from sending Internet-based emails to friends, colleagues and family,

to searching for jobs online through the Internet.”

These quotations summarise the views of respondents in relation to why they preferred computers and their Internet-based facilities than other ICTs available in public libraries. Once again, this confirms that the value attached to certain ICTs facilities in libraries depend on the ability of such facilities to address particular users' needs, hence some ICTs are most preferred than others in libraries. Therefore, it is critical for libraries to know the specific ICTs needs of their users, so that relevant facilities that meet specific needs of individual users are purchased to avoid fruitless expenditure.

4.2.1.5 Accessibility of ICTs at Ekurhuleni libraries

Determining the accessibility of ICTs in EMM public libraries was another objective of this study. The aim, here, was to establish if ICTs in libraries are within reach of every user or not, as facilities that are inaccessible are most likely to remain white elephants and not utilised. According to Day (1997), access is simply not an issue of public access points and their geographic locations alone. Citizens must be able to use the technology and have the capability to use the information. According to this author, the fact that these are skills that most people do not possess, the issues of access should be linked to training, education and learning. Respondents were asked to indicate as to whether ICTs facilities in the libraries were accessible to them or not.

In reviewing the literature, it was found that although ICTs were very accessible to a high proportion of users, they were not accessible to some of the users, due to barriers such as “users' fear and lack of knowledge and skills of how to use ICTs”, “time limit” and insufficient ICTs in libraries” (Chisenga 2004; Chaplin 2002). The findings of this study reveal that although ICTs were “very accessible” to a high proportion 134 (79%) of respondents, 36 (21%) of respondents found the facilities to be “not accessible”. The inaccessibility of ICTs could be attributed to the availability of a range of barriers that prevent ease of access to ICTs as already identified by Chisenga (2004) and Chaplin (2002), and these are also listed in Table 4.6 of this study. It is a fact that “access” is one of the key principles of Batho Pele, which emphasises the need for all government services to be accessible to all citizens. Therefore, the fact that some users found the facilities not accessible

means that there are certain measures that Ekurhuleni libraries need to take in order to ensure that facilities are accessible to everyone, such as, reducing the cost of ICTs services (printing, photocopying, laminating and fax services are paid for in the libraries), extending access time limit to computers as well as ensuring that staff members are trained on ICTs to assist users with ICTs-related queries or challenges.

Those who responded that ICTs in libraries were “not accessible” to them were requested to identify the barriers that make their access to ICTs a challenge, amongst which are: a) time limit; b) fear and lack of knowledge of how to use the ICTs facilities; c) insufficient facilities in libraries; d) unfavourable libraries hours and; e) other. Respondents were allowed to indicate more than one option, and multiple responses were provided.

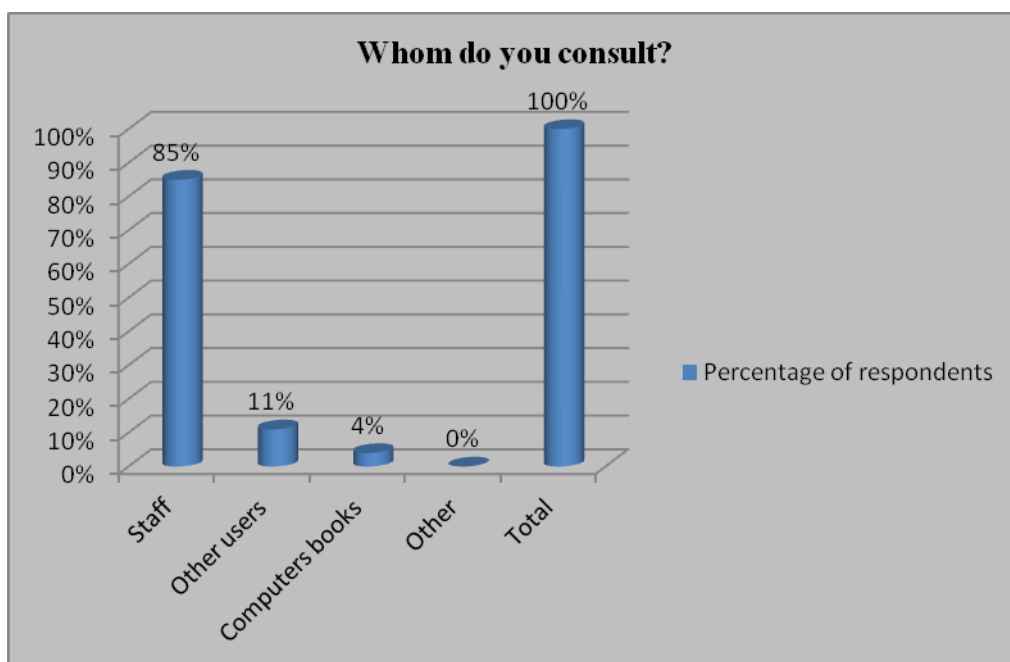
The results from the libraries user survey show that the main barrier to ICTs access was “insufficient facilities in the libraries”. “Time limit”, which could be linked to libraries ICTs usage management guidelines, which limit access to the facilities to at least 30 minutes per person, unless there is no one in line who has also made a booking to use the facilities, was identified by some as another barrier which prevents people from maximising the full benefits offered by ICTs in libraries. Although “fear and lack of knowledge of how to use the facilities”, “unfavourable libraries hours” and “other (cost of ICTs services)” were also identified as barriers, they had a lesser impact as barriers compared to “insufficient ICTs in libraries” and “time limit”. Nevertheless, the fact that some respondents identified “lack of knowledge and skills of how to use ICTs” as a barrier to ICTs access means that simply providing access to ICTs is not enough, as people also need training in order to know how to use the facilities.

Respondents were also asked to indicate whether they had access to ICTs elsewhere apart from the libraries. In response, 98 (58%) indicated that they did have access to facilities elsewhere, while 72 (42%) were found to be having no other access apart from libraries. Those who had other access to facilities elsewhere were requested to indicate their other access points from a) home; b) work; c) educational establishment; d) cybercafé; e) friend/relatives home and f) other. Respondents were allowed to indicate more than one option, and multiple responses were provided.

The results of this study show that respondents' other ICTs access points apart from libraries were home 53 (31%), cybercafés 38 (22%), work 29 (17%), educational establishments 17 (10%) and friends or relatives home 10 (9%). This may explain why some of the respondents did not use ICTs available in libraries as they had access to the facilities at these other places. Eve and Brophy (2000) and Chaplin (2002) found, in their studies, that people had, homes, work, educational establishments and cybercafés as other ICTs access points, and therefore did not rely on public libraries to access ICTs. The fact that users had other ICTs access points apart from libraries and did not rely only on public libraries to access ICTs means that libraries need to up their game if they are to have a competitive edge over other ICTs service providers, in order to remain relevant to the people, or else they will become white elephants.

Respondents were also asked to indicate whom they consulted when they experienced ICTs usage related problems in libraries from a) staff; b) computer books; c) other users and d) other. It was interesting to find that 145 (85%) of the respondents consulted "library staff", while "other users" were consulted by 18 (11%) of respondents. ICTs manuals were consulted by only 7 (4%) as reflected in Figure 4.7. There was nothing shocking about these results, considering that staff members are the first people users consult in libraries whenever they experience library usage challenge, be it ICTs or non-ICTs related matters.

Figure 4.7: Whom to consult when experiencing ICTs usage problems in libraries



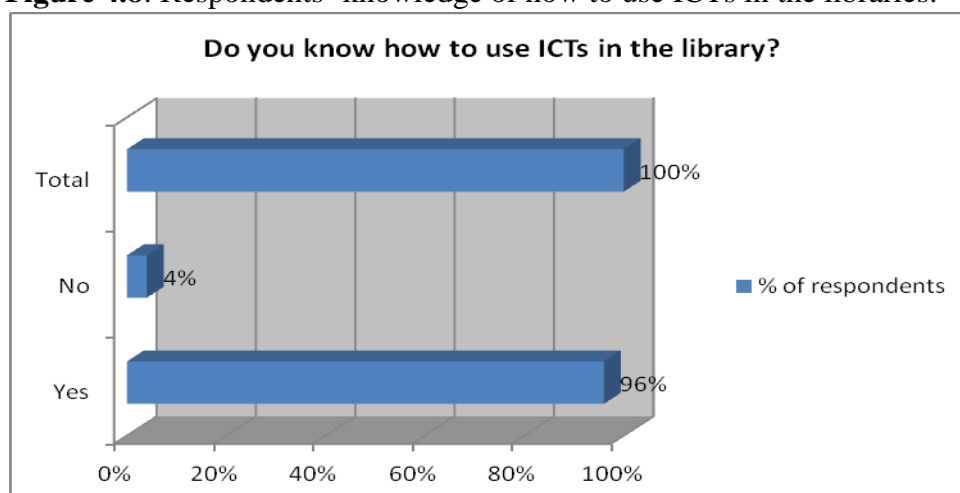
Therefore, in terms of accessibility of ICTs in EMM libraries, one can say that although the facilities seem to be accessible to 134 (79%) of users, there are barriers that make access to facilities a challenge that need critical attention. Consequently, critical evaluation of such barriers is necessary if libraries are to continue playing a role as one-stop information and ICTs access points. This is crucial because if no efforts are made to address these barriers, most users will be forced to use other points of ICTs access such as cybercafés, educational establishments, such as schools or universities, where they study. In the end, this will be bad for public libraries that are already facing the prospect of extinction as a result of the stiff competition from other ICTs service centres or providers.

4.2.1.6 Library users' ICTs training, knowledge and skills

The objective of this study was to determine if users of libraries had knowledge and skills to enable them to use the facilities successfully, as well as to find out if users had been trained how to use ICTs facilities available in libraries. This is against the backdrop that users who lack knowledge and skills of how to use ICTs, and never received relevant training, are most likely not to use them. Firstly, respondents were asked to indicate whether they knew how to use ICTs available in libraries or not. Clark (2010), Eve and Brophy (2000), Chisenga (2006) and Emojorho (2010), found that majority of public library users, particularly those living in poorest communities, lacked both ICTs knowledge and skills to make effective use of ICTs.

Interestingly, the findings of this study disagree with this, as only 6 (4%) of respondents were found to be having no knowledge and skills of how to use ICTs, against 164 (96%) who knew how to use them. If one takes into consideration the fact that very few respondents identified “lack of knowledge and skills of how to use the facilities” as a reason for their non-use of ICTs, these findings are not surprising. Figure 4.8 presents the findings in this regard:

Figure 4.8: Respondents' knowledge of how to use ICTs in the libraries:



It is quite clear that users of EMM libraries had knowledge of how to use ICTs in libraries, though 6 (4%) still lack such knowledge.

When asked to indicate the ICTs skills they had (with respondents allowed to indicate more than one option) and rate their proficiencies in each of the different skills, with a choice from a) Internet skills; b) computer skills; c) photocopying skills; d) printing skills and e) others, the study found that users of Ekurhuleni libraries had predominantly “very good” Internet search skills 107 (63%), computer typing skills 68 (40%), photocopying skills 77 (45%), printing 82 (48%), and emailing skills 1 (0.5%), followed by those whose skills in those areas were “good” and average. There were few respondents who showed lack of, or poor, skills in those areas as shown in Table 4.5.

Table 4.5: Respondents’ ICTs skills and their level of proficiency in each skill (N=164)

ICT Skills	Very good	Good	Average	Poor
Internet search	107 (63%)	53 (31%)	9 (5%)	1 (1%)
Computer typing	68 (40%)	63 (37%)	26 (15%)	13 (8%)
Photocopying	77 (45%)	65 (38%)	8 (5%)	20 (12%)
Printing	82 (48%)	51 (30%)	11 (6%)	26 (15%)
Other (emailing)	1 (1%)	-	-	-

There seems to be a correlation between the results in Table 4.5 and the fact that most people 158 (93%) in this study were found to be using ICTs in the libraries. The high percentage of those with “very good” and “good” ICTs skills justify why there was a high usage of ICTs in the libraries. This is based on the assumption that it is usually those users who have certain ICTs skills who are most likely to use public libraries’ ICTs facilities, while those without such skills are most likely not to use them as they find the facilities threatening to use.

Respondents were also asked to indicate whether they had received ICTs training in the libraries or not. The findings from previous studies by Bertot et al, (2008) and Oliver (2007) found that most public libraries in the US were providing both formal and informal training to patrons on a variety of topics that involved computers and Internet use. According to the findings of these studies, users had received training on how to set-up emails and web-browsing; how to use computer mouse, keyboard and printing facilities; how to use search

engines such as Google and Yahoo; how to use word processing, spreadsheet and presentation facilities. Other training provided from libraries, according to these authors, included how to use library’s online public access catalogue, using online databases, accessing online job-seeking and career-related information, safe online practices and accessing online government information.

However, in Africa, studies conducted by Chisenga (2004), Maswabi et al. (2011) and EIFL (2011) showed that although some users did receive training in libraries on how to use ICTs, training was mostly provided on an ad-hoc basis, due to factors such as lack of budget, lack of proper planning by library authorities as well as lack of training programmes. The findings of this study also shows a similar pattern, as a small proportion 46 (27%) of respondents indicated that they had received training in EMM libraries, against 124 (73%) who had not received training. This shows that few users of Ekurhuleni libraries had received ICTs training, which may confirm why some users did not have ICTs knowledge and skills of how to use ICTs facilities. The lack of ICTs training to majority of users could be linked to limited training budget or lack of it, which is a familiar phenomenon in most public libraries globally. Meanwhile, the low percentage of people who received training reflect the fact that most users of Ekurhuleni libraries need training on how to use ICTs available so that they are able to use the facilities independently with minimal dependence on staff.

When asked to identify the training they had received (with possibilities of multiple responses), the following trainings in Table 4.6 were identified:

Table 4.6: Library ICTs training received by respondents (N=46).

ICTs training received					
Internet search	Microsoft word	Microsoft Excel	PowerPoint	Microsoft access	Other (emailing)
40 (24%)	37 (22%)	31 (18%)	27 (16%)	27 (16%)	1 (1%)

The findings of the study show that 40 (24%) of the respondents from those who were trained received training on Internet search. This was followed by 37 (22%) of those who received training on Microsoft Word, 31 (18%) of those who received training on Microsoft Excel, 27 (16%) of those who received training on PowerPoint and 27 (16%) for Microsoft Access as

shown in Table 4.6. Only 1 (1%) of the respondents (under “other”) received training on emailing. Based on this finding, one may indicate that although most users knew how to use ICTs in libraries, their knowledge is not based on skills acquired and training received from Ekurhuleni libraries, as very few users had been trained on ICTs use in EMM libraries. This means that most users who have been trained received their training elsewhere, such as at work, school, universities and colleges where they were registered as students. This explains why most users had knowledge of how to use ICTs in libraries despite having received no ICTs training in the libraries. The other possibility is that the lucky ones who received training could be those who benefitted from skills developments training budget, which only benefitted some users from few chosen libraries in Ekurhuleni.

4.2.1.7 Challenges experienced by users in using ICTs in Ekurhuleni libraries

The last objective of this study was to identify the challenges that users experienced in utilising ICTs in the libraries, as well as finding out how such challenges could be alleviated. The likelihood of challenges becoming barriers to ICTs take-up and contributing to the non-use of the facilities justified why those challenges needed to be investigated, so that proper mechanisms could be put in place to address or curb them for users’ benefit.

In reviewing the literature, Chaplin (2002), Chisenga (2004), Emmanuel and Sife (2008) found that a number of challenges existed in public libraries that denied users the opportunities to maximise the full benefits offered by ICTs. These, among others, included libraries not having enough budgets to maintain the facilities, insufficient ICTs facilities in libraries, staff’s negative attitudes, staff’s lack of knowledge and skills of how to use the ICTs, power failure, little time allocated for ICTs access, old and worn-out facilities and corporate policies that limit usage of ICTs to a certain degree. The finding of this study, in this case, gives a clear indication that, while the new library technologies have benefit to library services, by presenting new modes of collecting, storing, retrieving and providing information, there are a number of challenges that these facilities pose to users of public libraries. These, unfortunately, have a negative impact on users’ ability to use libraries’ ICTs successfully. The following are the findings of this study in relation to the challenges faced by users when using ICTs in Ekurhuleni libraries:

Staff attitudes: Some of the users complained that some of the staff members have bad attitudes towards them when they seek help. Consequently, this led to some users feeling discouraged to seek help from them, thereby contributing to non-use of facilities by some. This becomes problematic particularly for those who lack ICTs skills and rely on help from staff members. This can be confirmed by the following quote from one of the respondents:

“Staff members are not willing to help when requested to, and at times are arrogant”.

As a way of alleviating this challenge, libraries users suggested that basic user satisfaction courses should be regularly provided to library staff in line with Batho Pele Principles so that they can be reminded of the importance of customers in libraries as service points.

Staff members’ lack of knowledge and ICTs skills: Some of the users lamented the fact that some staff members were unable to provide help, as they are not ICTs literate themselves. This becomes problematic for those first time users of ICTs who rely on staff for their guidance. It was suggested that the way to curb this challenge is by ensuring that all staff members receive at least basic ICTs training based on ICTs used in libraries so that they can be able to provide assistance when the need arises.

Low bandwidth: This was identified by majority of users, who complained that Internet was slow and sometimes not even available, which could be attributed to low bandwidth. The study by Alemneh and Hasting (2006) and Emmanuel and Sife (2008) also found this to be a major challenge in their studies as most of the respondents complained about low bandwidth. In terms of how this challenge could be alleviated, most people recommended that the ICTs system be upgraded, while others suggested that an increase in Internet bandwidth could address this challenge.

Power failures: Although they are hardly experienced at Ekurhuleni libraries, power failures had the capability of bringing libraries services to a standstill. A user who was badly affected by this challenge had this to say about power failure and how it affects services:

“I have been affected by the power failures four times when using computers in libraries. Although at times the power goes off for a few minutes, there are times when it goes off for

hours, resulting in all electronic services coming to a standstill”.

Emmanuel and Sife (2008) also found power failure to be one of the major challenge library users faced in Nigerian public libraries. In terms of how this challenge could be alleviated, most respondents were of the view that libraries in Ekurhuleni should have back-up systems in place to take over when electricity is down. This, according to them, will alleviate disruption of services when electrical power is down.

Access time limit: Time limit was also identified as another challenge associated with ICTs access in Ekurhuleni libraries, as access to computers was limited to 30 minutes at a time for a user, unless there were no other users in the queue waiting to use the facilities. This becomes a challenge, if one has to think of the time it takes for the Internet to open due to slow bandwidth identified above, and the time left for the user to peruse the facilities. Chaplin (2002) also found this to be a challenge in his study. In relation to how this challenge could be alleviated, there was some consensus among users that access time to facilities such as computers should be extended to at least an hour per person. The following are some of the quotes extracted from users’ questionnaires with regard to “access time limit” as a challenge:

Respondent 1

“For me, it is about not having the time to spend in the library, and the amount of time one can spend on the computer that become a challenge, though things are better now with extension of library hours”.

Respondents 2

“The challenge I have is that sometimes I do not finish a certain research because of time, and sometimes because of slow response of computers. Therefore, I think time limit to Internet access should be extended to at least an hour instead of 30 minutes”.

Cost associated with ICTs services: The costs of ICTs services in libraries were found to be making it difficult for some users, particularly those who were unemployed, to make effective use of libraries ICTs. Although the cost of printing, laminating, photocopying and

others may be regarded by staff as “reasonable” and in line with council tariffs, the situation was seen differently in the eye of unemployed users who could not afford even such “reasonable” costs. The following quote from one of the respondents in the study confirms this:

“Money that one has to pay for printing and other services must be cancelled as most of us users are unemployed and cannot afford”.

The study by Chaplin (2002) also found that the cost of ICTs in libraries also made it difficult for some users to maximise the full benefits offered by ICTs facilities in the libraries. When asked to give their views on how this problem could be alleviated, most users concurred that users should never be made to pay for ICTs-related services, as public libraries are regarded as public entities that are not profit-oriented.

Poor state of ICTS in libraries: The continuous breaking down of computers in the libraries was also one of the major challenges that users experienced week in and week out. The situation is aggravated by the availability of old and worn-out ICTs facilities, such as computers, photocopiers and printers in libraries. Emmanuel and Sife (2008) also found this problem to be affecting the use of ICTs in Nigerian libraries by users. As a way of alleviating this difficulty, the following suggestions were made by respondents:

Respondent 1

“Broken computers should be fixed as a matter of urgency”

Respondent 2

“There should be an IT specialist available so that broken computers can be fixed quickly in libraries”

Insufficient ICTs facilities in libraries: The other challenge identified by the library users was related to limited ICTs, particularly computers, in the libraries. This has also been the finding of many studies related to ICTs challenges in libraries such as that of Ng’ang’a

(2003). The following were suggested as best means of alleviating this challenge, by respondents:

Respondent 1

“The solution is only if the good for nothing government can supply the libraries with sufficient ICTs facilities, such as fax machines, printers, and computers”

Respondents 2:

“You only have few computers in libraries and the Internet is slow, so lack of WIFI is one major challenge for faster Internet”. “This can be addressed by investing in WIFI which will provide faster Internet access as well as making available additional computers to meet the ever-increasing demands of us users”.

Restrictive library policies: In line with the finding by Chaplin (2002) that institutional policies and procedures may hinder the usage of ICTs in libraries, the findings of this study reveal that library ICTs usage policies and guidelines deny users the opportunity to effectively use computer devices, such as storage devices, as well as saving documents in computers. There was a general feeling among respondents that since technology is ever developing, public libraries should be flexible and allow them to use such devices, provided proper monitoring is done by the librarians to ensure that only materials that are not harmful are downloaded from the Internet and saved in computers.

Theft of ICTs-related equipment: The finding of this study also reveals that theft of ICTs-related equipment, particularly computers, which is rife in most townships like Tembisa West, is becoming a serious problem. Most libraries are broken in, and most computers stolen, resulting in users having no computers until new ones are acquired after quite some time. Respondents believe that appointment of permanent staff members in libraries 24 hours a day as well as procurement of base locks for computers could keep the facilities safe. The above challenges and how they could be addressed in users’ own words can be summarised as follows:

Table 4.7: Challenges experienced by users in using ICTs at Ekurhuleni libraries

Nature of challenge		Description of challenge	How this challenge may be alleviated
1	Staff attitudes	Staff members are blamed for having a negative attitudes and lack of willingness to help	Library authorities should consider sending staff to attend customer care courses and workshops regularly so that they know how to treat them
2	Staff members' lack of knowledge and ICTs skills	Some staff members do not have ICTs knowledge and skills to help users.	Staff members should be trained on how to use the available ICTs in libraries so that they can help users with skills acquired.
3	Low bandwidth	Low bandwidth resulting in Internet being slow	Library management should ensure that Internet bandwidth is increased for faster Internet
4	Power failures	When electricity is down due to load-shading or other factors, ICTs services are negatively affected	Library management must ensure that UPS systems are in place to ensure continuity of services when electricity is down.
5	Access time limit	30 minutes allocated for one person to use the computers is not enough	Access time to Internet should be increased to at least an hour per.
6	Cost associated with ICTs services	Printing, photocopying, faxing and laminating services are unaffordable as most users are unemployed	All ICTs services should be available free of charge.
7	Poor state of ICTs	ICTs in libraries are old and worn-out resulting in continuous break down	Old ICTs should be replaced with new ones. Maintenance of ICTs should be

			prioritised
8.	Insufficient ICTs facilities in libraries	Very limited ICTs in libraries	Additional ICTs should be purchased to meet the ever-increasing users' demands
9	Restrictive library policies	Certain policies restrict users from maximising the full benefits offered by ICTs, e.g. policy restricting the saving of documents in computers and those that ban the use of USBs by users.	Library policies should be flexible in order to accommodate the new ICTs developments taking place globally.
10	Theft of computers	Theft of computers denies other users the opportunity to have access to the facilities	Permanent security personnel should be appointed to work 24 hours per day in libraries.

The fact that users of Ekurhuleni libraries face such challenges in using ICTs in the libraries means that library authorities need to come up with a plan to curb these challenges as they also contribute to non-use of ICTs by users of libraries.

4.2.2 Staff interviews

Telephone interviews were held with control librarians of the eight libraries selected for the study, who offered themselves to be interviewed. This was critical in order to give more balanced responses to the study. The decision to use telephone interviews for this target group was based on its convenience for both the interviewees and interviewer. Although its main drawback is its inability to observe non-verbal communication, it was felt that due to the distance from one library to another and the fact that there were limited funds to conduct this study, another approach would not be preferable. During the interview, responses were noted down immediately to support the exact recording of what was said.

The interview was intended to yield more detailed answers regarding the use of ICTs in Ekurhuleni libraries by users. Meanwhile, the use of open-ended questions was useful as the

researcher was seeking control librarian’s opinions and views in relation to the use of ICTs in libraries. A total of five interview questions were asked, and such questions were the same for all the interviewees. Control librarians interviewed were from: Actonville, Benoni, Boksburg, Brakpan, Edenvale, Germiston, Reigerpark and Tembisa-West libraries, and the questions revolved around the following key themes: (i) types of ICTs available in Ekurhuleni libraries, (ii) availability of users ICTs training programmes in Ekurhuleni libraries and (iii) challenges faced by users in utilising ICTs in Ekurhuleni libraries.

4.2.2.1 Types of ICTs available at Ekurhuleni libraries

The objective of this study was to find out the types of user-based ICTs facilities available in EMM libraries. Past studies on the subject revealed the availability of a variety of ICTs facilities in public libraries globally. For instance, Bertot et al. (2008), Shank (2012), Becker at al. (2010), Nkanu and Okon (2010) and Mahmood (2008) found that computers and their Internet-based facilities, compact discs (CDs), CD-ROMs, Digital Video Discs (DVDs), printers and photocopiers were some of the ICTs facilities available in public libraries. The findings of this study revealed that a variety of user-based ICTs facilities were available in Ekurhuleni libraries, and these were: computers, computers with Internet, compact discs (CDs), CD-ROMs, Digital Video Discs (DVDs), printers, photocopiers, scanners, laminators and televisions. This is not surprising if one has to consider that most public libraries in South Africa are following on the footsteps of developed countries of the world, such as Britain and United States of America, in as far as ICTs adoption and use is concerned. Table 4.8 presents the findings of this study in terms of which ICTs (according to control librarians) are available in each of the eight libraries participating in the study. The findings only reflect which facilities were available in libraries, irrespective of whether such facilities were in good or bad working conditions at the time of the study.

Table 4.8 Types of ICTs available at Ekurhuleni libraries

Name of library	ICTs facilities available
Actonville library	Computers, computers with Internet, photocopiers, printers, CDs, DVDs, CD-ROMs, fax machine and daisy players for the visually impaired users.

Benoni library	Computers, computers with Internet, CDs, CD-ROMs, DVDs, photocopiers, printers, fax machines and daisy players for the visually impaired users.
Boksburg library	Computers, computers with Internet, CDs, CD-ROMs, DVDs, photocopiers, printers, faxes, television, and daisy players for the visually impaired users.
Brakpan library	Fax machines, photocopiers, printers, computers, computers with Internet, laminators, scanners, DVDs, CDs, CD-ROMS, and daisy players for the visually impaired users.
Edenvale library	Computers, computers with Internet, CDs, CD-ROMs, DVDs, laminators, scanners, photocopiers, printers, fax machines and daisy players for the visually impaired users.
Germiston library	Computers, computers with Internet, photocopiers, printers, fax machines, CDs, CD-ROMs, and DVDs and daisy players for the visually impaired users.
Reigerpark library	Computers, computers with Internet, printers, CDs, DVDs, CD-ROMs, photocopiers, fax machines and daisy players for the visually impaired users.
Tembisa-West library	Computers (including junior laptops), computers with Internet, CDs, CD-ROMs, DVDs, television, video cassette recorder (VCR), photocopiers, printers, fax machine and daisy players for the visually impaired users.

It is clearly shown here that ranges of ICTs facilities are available in libraries at Ekurhuleni. What is most interesting is that most of the facilities used in each of the libraries are the same. This is not surprising, considering that the libraries under study belonged to the same

municipality, and had the same goal of ensuring that the digital divide that existed between those who had access to the ICTs facilities and those who did not have access to the facilities in Ekurhuleni was bridged. Therefore, computers, computers with Internet, photocopiers, printers, fax machines, daisy players and junior laptops were found to be among the ICTs available in EMM libraries. What turned out to be the most interesting finding was that even those libraries located in poorest communities (townships) had ICTs facilities similar to those found in town libraries. This demonstrates some efforts by library authorities in ensuring that resources are equally shared among all libraries, irrespective of where they are geographically located.

However, the fact that ICTs facilities in almost all libraries were the same gives an impression that the distribution of such facilities in libraries may not have been based on research or ICTs needs of people using those libraries, but based on library managements' assumption that such were standard ICTs facilities that each library should have. This explains why some ICTs, which were highly utilised in some libraries, were less used in others, because communities differ and the same applies to their ICTs needs. It is for this reason that research is needed before any system is implemented to determine the actual needs of each community. This would ensure that relevant ICTs facilities that meet the specific needs of individual communities are procured.

4.2.2.2 Users' ICTs training programmes in Ekurhuleni libraries

It was also an objective of this study to determine if there were ICTs training programmes aimed at training users on how to use ICTs available in EMM libraries. Although literature revealed that there were ICTs training programmes in most of the public libraries in developed countries of the world, the situation in African public libraries seems to be totally different, due to factors such as lack of budget and proper planning by those in higher authorities. For instance, Bertot et al. (2008) found that in the USA, informal and formal ICTs trainings were provided regularly to users, particularly in the urban areas. However, in most Africa public libraries, such programmes are rare and trainings were mostly provided on an ad-hoc basis, based on the availability of funds. Chisenga (2004) for instance, found that most public libraries' ICTs training in Botswana, Ghana, Kenya, Malawi, Nigeria, South

Africa, Tanzania, Uganda, Zambia and Zimbabwe were provided on an ad-hoc basis, and this had more to do with lack of budget to train users on ICTs use.

The findings of this study confirms the above, because six (Actonville, Benoni, Boksburg, Brakpan, Edenvale and Reigerpark libraries) out of eight control librarians in the study indicated that there were no ICTs training programmes in their libraries, while only two libraries (Germiston and Tembisa-West) had such programmes. The mere fact that only two control librarians acknowledged the availability of such programmes in their libraries clearly shows that training is neither structured nor inclusive of all library users in the municipality. Therefore, the training referred to by the two librarians could be the one provided through corporate budget whereby some libraries (selected by management) had to identify individuals (registered library members) from the communities to undergo basic ICTs training, as part of community skills development initiative. However, due to budget constraints, such training was also not properly structured. When asked to identify the training programmes available, the librarians that confirmed the availability of such programmes responded as follows:

Respondent 1:

“In Germiston library, there are twelve computers at a training room, where both members and non-members of the library receives: basic computer skills training, Microsoft Word and Excel training, basic Internet orientation training, basic emailing skills training and online mapping training and other, depending on the needs of users”

Respondent 2:

“Tembisa-West library provide a range of ICTs training to registered users on regular basis, organised by the library and information services’ training division. These include training on Microsoft office and Internet. Library users are also taught on how to send and open/read emails”.

Respondents (6) whose libraries did not have ICTs training programmes were asked to identify interventions in their libraries that were aimed at ensuring that users were ICTs

literate. All respondents indicated that there were no specific interventions, except that users were assisted individually on ICTs matters as and when they needed help during their visits to libraries. It seems as if respondents who confirmed the availability of training programmes in this study could not distinguish between a programme and something that happens on an ad-hoc basis. This is based on the fact that if they were really programmes, they should have been implemented citywide, indicating which users from which libraries should be trained, when, where and by whom. A special training budget should have also been set aside to address the ICTs skills gaps of all users of the different libraries. The mere fact that there were ICTs training rooms, with few computers in those libraries does not necessarily mean that there were training programmes in the libraries. Instead, one may conclude that training is provided in the libraries at an ad-hoc basis; hence, library management should consider structuring users' ICTs training for every user's benefit.

4.2.2.3 Challenges experienced by library users in using ICTs in Ekurhuleni libraries

Another objective of this study was to establish the difficulties faced by EMM public libraries users (from control librarian's point of view) in relation to ICTs use in the libraries. The review of literature has revealed that users of libraries faced many challenges when using public libraries ICTs. The challenges faced, unfortunately, deny users a chance to successfully utilise the facilities. Chisenga (2004), Chisenga (2006), Emmanuel and Sife (2008) and Chaplin (2002) for, instance, found that, out of date facilities, power failure, low bandwidth, restrictive corporate policies, insufficient facilities, library staff's lack of ICTs knowledge and skills and costs of facilities were among the difficulties that users faced in using ICTs in public libraries. The findings of this study revealed that users of EMM libraries faced similar challenges above, although theft of facilities, particularly computers (not found in previous studies) seemed to be amongst the most common problems at some libraries. The following quotations extracted from respondents' questionnaires support this finding:

Respondent 1 (From Actonville library):

“Users of Actonville library face the following challenges when using ICTs in the library: unreliability of the facilities as they are on and off, time constraints as people are given limited access time, slow Internet due to low bandwidth”

Respondent 2 (From Benoni library):

“In Benoni, users’ ICTs challenges include; time limit, as access to computers is limited to 30 minutes per user; broadband and network problems, resulting in slowness of facilities such as computers; lack of proper service and maintenance of facilities such as computers and photocopiers, resulting in such facilities being off for months; and limited facilities against those wanting to use them”.

Respondent 3 (From Boksburg library):

“Boksburg library users face the following ICTs challenges, time limit for access to computers, power failure (although it happens once after a while), insufficient ICTs facilities, staff with limited ICTs skills, who cannot provide necessary assistance to those in need.”

Respondent 4 (From Brakpan library):

“Access time limit, slowness of computers, insufficient ICTs facilities and lack of space to accommodate additional ICTs facilities and users are some of the challenges that Brakpan library users face in using ICTs in libraries”

Respondent 5 (From Edenvale library):

“A range of challenges are faced by users of Edenvale library in relation to ICTs use. These, among others, includes cost of ICTs services, network problems, old and slow computers, access time limit and insufficient ICTs (particularly computers)”

Respondent 6 (From Germiston library):

“Access time limit;, cost of ICTs services; insufficient ICTs facilities to meet the needs of user; network-related problems and slowness of computers, due to low bandwidth; and restrictive policies, as users are not allowed to save their documents in computers or use their discs, are some of the challenges faced by Germiston library users in relation to the use of ICTs”

Respondent 7 (From Reigerpark library)

“In Reigerpark library, no provision is made for minors and children under the age of 18 due to restrictive library policy that states that minors and children under the age of 18 must be accompanied by parents if they want to use ICTs facilities such as the Internet. Another difficulty is some staff members cannot help users in ICTs matters as they lack the knowledge and skills necessary to help users who do not know how to use the facilities. This result in users feeling discouraged from using the ICTs facilities available”

Respondent 8 (From Tembisa West library):

“In Tembisa West library, apart from slowness of Internet, lack of maintenance to facilities and costs, ICTs facilities such as computers, DVD players, and tape recorders are continuously stolen, resulting in users having no other points of access for a long time. The lack of proper service and maintenance of the facilities also affect users as this has a negative effect on the ability of the facilities to function properly.”

Therefore, the views of Staff in relation to the challenges that library users’ face in using ICTs in EMM Libraries seemed to be confirming what the users themselves had already identified. This is, however, not surprising considering the fact that control librarians were working for same libraries in the same municipality where users identified such challenges. Therefore, it is very likely that in such situations the challenges identified would remain the same for both users and control librarians.

4.3 Summary

In this chapter, data from library users’ questionnaires and control librarians’ interviews was analysed, presented and interpreted, and the following is the synopsis of the findings:

- It appears there is a variety of ICTs in use in Ekurhuleni libraries, and that such facilities are used for a range of reasons, including study, research, leisure and accessing online library catalogues.

- It becomes clear that the majority of users of ICTs in public libraries in Ekurhuleni are by students. From the results of the library questionnaire, it is shown that the high proportion of public libraries ICTs use is for study 110 (65%) and research 138 (81%) which are synonymous with students activities., and that such facilities are used often (more than once a week) by library users.
- The results of library survey shows that most users 191 (95%) of libraries had positive attitudes towards ICTs in the libraries and considered them “very important” and “vital” in improving services rendered by libraries.
- From the results of the library user questionnaire, it appears that computers and their Internet-based facilities, photocopiers and printers are most preferred by users of Ekurhuleni libraries.
- The results of the study reveal that although ICTs in libraries are accessible, a range of barriers exist that discourage users from using the facilities. Such barriers mentioned in section (4.2.1.5) need to be removed for libraries ICTs to have an impact on people’s lives.
- The findings also reveal that though most users 124 (73%) did not received training on how to use ICTs in libraries, due to lack of ICTs training programmes, they still had knowledge and skills of how to use the facilities in libraries.
- From the results of library user questionnaire and staff interviews, it becomes clear that although ICTs are credited with lots of benefits in libraries, they are also bringing some challenges, which, if not addressed, have the potential to discourage users from using public libraries ICTs facilities.

The next chapter presents the summary of major findings, conclusions and recommendations.

CHAPTER FIVE

SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Introduction

In the previous chapter, data was analysed, presented and interpreted. This chapter provides the summary of the findings as well as conclusions and recommendations of the study. This study was conducted at Ekurhuleni Metropolitan Municipality, with the purpose of investigating the use of ICTs by users of Ekurhuleni libraries. The study aimed at finding answers to the following research questions:

- What types of ICTs are available in Ekurhuleni libraries?
- What are the main uses of ICTs in Ekurhuleni libraries?
- What is the attitude of Ekurhuleni libraries users towards ICTs in libraries?
- What ICTs facilities in Ekurhuleni libraries do users prefer, and why?
- Are ICTs in Ekurhuleni libraries accessible to users?
- Do users of Ekurhuleni libraries have knowledge and skills to use ICTs in libraries?
- Are there programmes in Ekurhuleni libraries that train users on how to use ICTs?
- What are the challenges experienced by users in utilising ICTs in Ekurhuleni libraries, and how can such challenges be alleviated?

Although the study focuses on eight (8) of the 43 libraries in Ekurhuleni, the findings can be used to give a general overview of ICTs use in Ekurhuleni libraries, and the recommendations are such that they could be implemented by any library in the municipality.

5.2 Summary of the findings

In this section, the summary of the findings is presented, based on the objectives of the study.

5.2.1 To find out the types of ICTs available in Ekurhuleni libraries

Technological advancement has resulted in the availability of a variety of ICTs in public libraries. This study has shown that due to such developments, ICTs facilities such as computers, computers with Internet, CDs, DVDs, CR-ROMs, laminators, scanners, photocopiers and printers are available at EMM libraries for use by members of the public.

This research therefore concludes that in line with other public libraries that have adopted the use of ICTs around the globe, a range of user-based ICTs facilities (listed above) are available in Ekurhuleni libraries for use by members of the public in order to meet their regular needs.

5.2.2 To determine the main uses of ICTs in Ekurhuleni libraries.

This study has shown that most users of EMM libraries use ICTs in the libraries more than once a week, with the main reasons relating to supporting course of study. This is followed by research, leisure and general enjoyment as well as job searching in the Internet. This research therefore concludes that most users of Ekurhuleni libraries use ICTs (listed in section 5.2.1) in the libraries for mainly academic related purposes, although other usage include leisure and general enjoyment as well as job searching in the Internet. The findings for this objective can be summarised as follows:

- Most users of Ekurhuleni libraries use ICTs in libraries, while only few users do not use them.
- Computers, computers with Internet, photocopiers, and printers are used by majority of library users compared to other ICTs in the libraries (listed in section 5.2.1).
- Most users of Ekurhuleni libraries used ICTs facilities “more than once a week”, while some use them “once a week”, and “once every two weeks”.
- ICTs in Ekurhuleni libraries are used for a range of reasons, including, supporting course of study, leisure and general enjoyment, research, and online public access catalogue search. However, study and research were found to be the main reasons for ICTs use compared to other reasons; and
- The reasons why some users do not use ICTs in libraries relates to users’ lack of ICTs knowledge and skills, insufficient ICTs in libraries, users having ICTs access elsewhere apart from libraries, and users having no interest in using public libraries ICTs facilities.

5.2.3 To investigate the attitudes of users towards ICTs in Ekurhuleni libraries

- The results of the study reveal that most users of Ekurhuleni libraries (including those who do not use the facilities) have positive attitudes towards ICTs in the libraries, and

that they consider them relevant to them as well as vital in improving the quality of services. This research has shown that most users of Ekurhuleni libraries considers the provision of ICTs in public libraries as very important and vital in ensuring that their needs are effectively and efficiently met within a reasonable time. Based on these findings, it is concluded that most users of Ekurhuleni libraries have positive attitudes towards ICTs in libraries and perceive them to be relevant for them in addressing their needs.

5.2.4 To examine users' ICTs preferences in Ekurhuleni libraries

- The results of the study reveal that computers, computers with Internet, photocopiers and printers are highly favoured by users of libraries compared to other ICTs, such as laminators, faxes, CDs DVDs and CD-ROMs in use in the libraries.
- The study findings also show that the reasons for preference of computers and their Internet-based facilities relates to the abilities of such facilities to make current information available within a reasonable space of time.
- The responses from survey questionnaires also reveal that other users prefer the facilities because they are seen as tools through which they could communicate with friends, relatives and families who are staying far away from them.
- Other users responded that they preferred these facilities because through them it becomes convenient for them to apply for jobs online.

Although a range of ICTs facilities are preferred by library users in Ekurhuleni libraries, this research has shown that some of the facilities are highly preferred than others. Computers, computers with Internet, photocopiers and printing facilities have been shown to be highly preferred than other ICTs (listed in section 5.2.1) available in the libraries. Therefore, this research concludes that computers and their Internet-based facilities as well as auxiliary services (photocopying and printing facilities) are most preferred by users of libraries in Ekurhuleni compared to other available ICTs facilities.

5.2.5 To determine the accessibility of ICTs to users of Ekurhuleni libraries

This study has shown that despite a number of barriers that became obstacles for some users to maximise the full benefits offered by ICTs such as time limit, lack of knowledge and skills

of how to use the facilities, and costs of ICTs services, ICTs facilities were, nevertheless, found to be accessible to most users of the libraries. It can be concluded that ICTs in Ekurhuleni libraries are accessible to library users, though barriers (listed in section 4.2.1.5) in chapter 4, preventing some users from accessing the facilities need serious attention by library authorities.

5.2.6 To determine Ekurhuleni library users' ICTs knowledge and skills

It has been shown by this study that most users of Ekurhuleni libraries have knowledge and skills of how to use ICTs available in libraries, despite the fact that there are no ICTs training programmes in most libraries, as training is provided on an ad-hoc basis. However, the lack of training and skills in some individuals is a worrying factor for libraries as most of the information in libraries today is available electronically, meaning that only those with ICTs knowledge and skills will benefit from them. It is for this reason that this study concludes that libraries have to empower their users by making ICTs training a priority to all users so that they could acquire knowledge and skills of how to use the facilities successfully.

5.2.7 To ascertain the availability of ICTs training programmes in Ekurhuleni libraries

- The findings of this study reveal that there are no structured users' ICTs training programmes in Ekurhuleni libraries.
- Nevertheless, this study also shows that unstructured training is provided on an ad-hoc basis, at certain libraries, where users have received training on Internet search, Microsoft Word, Microsoft Excel, Microsoft Access, Power Point as well as "other" (emailing).

5.2.8 To establish the challenges experienced by library users in using ICTs in libraries

The study was based on the assumption by the researcher that library users in Ekurhuleni may be experiencing a number of challenges that deny them the opportunity to maximise the full benefits offered by ICTs in libraries. This stems from the fact that some users still prefer not to use the facilities despite them being available almost free of charge and the benefit associated with them. This research has shown that, indeed, users face a number of

challenges that discourage them from using the facilities and these include: cost of ICTs services, access time limit, interrupted power supply, theft to computers, staff attitudes, slow computers due to slow bandwidth, insufficient ICTs facilities as well as unmaintained facilities due to budget constraints. These challenges are also contributing to library users becoming reluctant to use the available ICTs facilities. Library authorities have to ensure that such challenges are addressed as they also discourage users from using the available ICTs in libraries.

5.3 Conclusions

This study intended to assess the utilisation of ICTs in public libraries at Ekurhuleni with the aim of finding out whether the facilities were actually used by users or not. In line with the objectives set for this study, it is concluded that a range of ICTs facilities are available at EMM public libraries such as computers, computers with Internet, laminators, photocopiers, printers, scanners, DVDs, CDs, CD-ROMs. The study also concludes that among all these facilities, computers, computers with Internet, photocopiers and printers are highly used and preferred by library users. It is also concluded that users of Ekurhuleni libraries have positive attitudes towards ICTs in the library and considers them vital services capable of improving service provision.

This study also conclude that despite certain barriers that have the potential to affect access to the facilities such as users' lack of ICTs knowledge and skills, access time limit and cost of ICTs services, the facilities are accessible to majority of library users. The study also concludes that despite the lack of training programmes in most libraries (as training is provided in an ad-hoc basis); most library users have knowledge and skills to use ICTs available in the libraries. Lastly, it is concluded that although the facilities are highly utilised by the users, a range of challenges (in section 4.2.1.7) exists that have the potential to discourage library users from using the facilities. It is against this background that the following recommendations are made to ensure that Ekurhuleni libraries become relevant to the needs of users in relation to ICTs and their utilisations:

5.4 Recommendations

- Library management should ensure that specific specialist posts are created for librarians to manage ICTs and their usage in libraries. In other words, each library should have at least one person specialising in ICTs in order to deal with ICTs related matters or challenges. This person will also provide help to users as and when such help is needed, and will be responsible for ensuring that minor ICTs technical glitches are resolved at specific service points within a reasonable time.
- Library management should ensure that sufficient budget is made available during planning, for ICTs related matters. This will ensure that ICTs facilities are serviced and maintained regularly to address the problem of slowness of computers as another challenge identified by libraries users.
- Structured ICTs training should be offered to library users to ensure that their ICTs skills are enhanced. This will reduce the number of people who have to rely on staff who also have other responsibilities to take care of.
- Library staff members should be sent for refresher customer care courses so that they could be reminded of the importance of displaying positive attitudes towards library users at all times.
- Training of librarians or library staff on ICTs should be considered so that they are able to provide help when it is needed.
- In terms of non-ICTs users, a great amount of out-reach programmes should be undertaken to ensure that ICTs services are well marketed. People should be made aware of ICTs services available in libraries through, for instance, by word of mouth and notices placed in each of the libraries where such services are offered. Local radio stations and newspapers should also be utilised to market the services so that people are made aware of the services. The fact that most of the ICTs facilities are free, such as access to the computers and Internet, should be advertised, as cost is seen as one of the barriers to ICTs take-up in the libraries.

- Library authorities should consider revising their tariffs in relation to ICTs, as they are considered to be out of reach with the masses, considering that the majority of those who use the facilities are students who cannot afford to pay for such costly services.
- The time allocation for each member to have access to the facilities should be extended from 30 minutes to at least an hour, provided sufficient ICTs facilities are available in libraries to cater for everyone's needs.
- Although power failure is not considered a major challenge in EMM libraries, as they do not occur often, library authorities should consider having uninterrupted power supply (UPS) systems in place in libraries so that ICTs-related services are not interrupted when electricity is down. Power failure results in ICTs services shutting down and until library authorities consider introducing this system, libraries will remain with this challenge for quite a long time.
- Internet bandwidth should be increased so that users do not have to wait long for documents to be downloaded from the Internet. This will also reduce the amount of time that others have to wait for one to finish using the Internet facilities.
- Lastly, the fact that the main uses of ICTs in Ekurhuleni libraries are related to study and research means that library authorities need to consider the importance of libraries subscribing to a variety of electronic databases, such as EBSCO, Emerald, ProQuest and others, so that users can have access to current and recently published journals articles for their studies, particularly those that are studying at institutions of higher learning.

5.5 Suggestions for further research

There are varieties of themes, which may require further attention in the field of ICTs in public libraries, which could not be covered in this study due to limited time of study. These themes could be interesting topics for future research and are indicated below:

ICTs use by visually impaired users of Ekurhuleni public libraries

Since public libraries are general in nature and provide services to all, including the visually impaired users of communities where libraries are located, it would be interesting to find out about the types of ICTs available in EMM libraries for the visually impaired users, as well as finding out the extent to which such facilities are used by this user group. Henceforth, a further study in this area would be ideal.

Children's use of ICTs at Ekurhuleni public libraries

ICTs are not only having impact on the grown-ups, but also affecting children's lives. Many public libraries around the globe also have ICTs facilities for young children, which are aimed at attracting children to libraries, so that they could become future independent users of public libraries ICTs and their facilities. Some of the facilities are junior laptops, with computer games and school-related activities. It would be interesting to find out about the types of ICTs available for this user group in Ekurhuleni libraries and the extent to which such facilities are used. Currently, no studies have been conducted on this aspect; hence a need for more research on the subject is justified.

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Appendix A: Batho Pele Principles



South African Government Information



Batho Pele - Putting people first



The Batho Pele initiative aims to enhance the quality and accessibility of government services by improving efficiency and accountability to the recipients of public goods and services.

Batho Pele requires that eight service delivery principles be implemented

Regularly consult with customers

Set service standards

Increase access to services

Ensure higher levels of courtesy

Provide more and better information about services

Increase openness and transparency about services

Remedy failures and mistakes

Give the best possible value for money.

Source: Department of Public Service and Administration

Last modified: 28 November 2007 14:27:55.

Appendix B: Letter of request to undertake research in Ekurhuleni Municipality LIS division.

P.O.Box 42720

Fordsburg

2033

09 May 2011

The Director (LIS)
Department of Sports Recreation Arts and Culture
P.O Box 25
Edenvale, 1610

Dear Madam

REQUEST FOR APPROVAL TO CONDUCT RESEARCH IN YOUR DIVISION FOR LIBRARY AND INFORMATION SERVICES (LIS)

1. The purpose of this letter is to request your approval for me to undertake a survey on utilisation of information and communication technologies (ICTs) in your libraries.
2. I am a master's student in Information Science at the University of South Africa doing a research on "*Utilisation of information and communication technologies (ICTs) in public libraries at Ekurhuleni, South Africa*". The main aim of this study is to acquire empirical data about the utilisation of the facilities by users of libraries in order to provide evidence on whether such facilities are in actual fact being effectively utilised by users or not.
3. This research is crucial as it may lead to a better understanding of how and by whom are ICTs in EMM libraries being utilised. The results can also support the demands for libraries continued investment in ICTs facilities. In case the facilities are found to be under-utilised, the recommendations will benefit the LIS division in terms of what needs to be done to ensure effective utilisation of the facilities.
4. I may mention that all replies will be treated with strictest confidence. Data will be presented in the aggregate, and responses will not be attributed to a particular respondent. It is worth mentioning that on completion of the study, a copy of the dissertation will be donated to the LIS division of Ekurhuleni and the results will be shared and discussed with LIS management

Thanking you in advance for your prompt and positive response

Maurice Mamafha

M.INF student

072 267 8278

Appendix C: A letter of approval to undertake research in Ekurhuleni Metropolitan Municipality, LIS division

SRAC-Libraries

P.O. Box 25

Edenvale, 1610

30 May 2011

P.O. Box 42720

Fordsburg

Johannesburg

2033

Dear Maurice

Re: request for approval to conduct a study

In response to your letter dated 9th May 2011 on the above subject, permission is hereby granted for you to conduct the study. You will be required to present your findings and recommendations to the LIS management

With kind regards

Zingisa Z Maneli

Director: Library and Information Services

Department of Sports, Recreation, Arts and Culture

Telephone : +27 (0) 11 999 3211

Facsimile : +27 (0) 11 999 3357

E-mail : @ekurhuleni.gov.za

Website : www.ekurhuleni.com

Postal : P O Box 25

Edenvale, 1610

Appendix D: Survey questionnaire for library users

Dear Participant,

I am a Masters student in the Department of Information Science at the University of South Africa (UNISA), gathering data for a research project titled “*Utilisation of information and communication technologies (ICTs) at Ekurhuleni Metropolitan Municipality (EMM) libraries, South Africa*”. This data gathering is a requirement in order for me to fulfil my above study program at UNISA.

The aim of this study is to determine the utilisation of ICTs by users of EMM public libraries. The findings of this study will be crucial to support the demand for EMM public libraries’ continued investment in ICTs facilities for the benefit of users. Please, you are requested to answer and return the survey questionnaire provided, which will only take an average of 15 minutes of your time to complete, on or before 10 September 2012. Kindly be assured that the information provided will be treated with confidentiality and will only be used for the purpose of this study. Meanwhile, your participation is voluntary, and you may withdraw from participating in the study any time if you feel you no longer want to be part of it.

Thank you in advance for your willingness to participate in this study. I can be reached by email at MauriceM@ekurhuleni.gov.za or tmmaurice@telkomsa.net

Do you consent to participate in this survey?

Yes [] No []

If yes, please answer the following questions below:

Section A: Demography

Instruction: Mark with an X next to an appropriate answer

1. Are you a registered user of Ekurhuleni libraries?

Yes [] No []

1.1 If yes, in which of the following libraries are you a member?

Actonville	
Benoni	
Boksburg	
Brakpan	
Edenvale	
Germiston	
Reiger Park	
Tembisa-West	

2. Gender

Male

Female

3. Age

Between 13 and 17 Between 18 and 25

Between 26 and 34 Between 35 and 40

Above 40

4. Qualifications

Diploma Degree Honours

Master PHD Other (specify).....

5. Employment status

Employed Unemployed Self Employed

6. Ethnicity

African Indian

Coloured White Other (specify).....

Section B: Use of ICTs in the libraries

7. Do you use ICTs facilities in the library?

Yes No

7.1 If yes, which of the following ICTs do you use (Mark as many as applicable)

Computers Computers with Internet Television CD-ROM's
 Laminator Telephone Photocopier DVDs
 Printer Scanner CDs Other (specify).....

7.2 How often do you use ICTs above? (Mark as many as applicable)

Facility	Frequency of ICTs use			
	Daily	Once a week	More than once a week	Once every two weeks
Computers				
Computers with Internet				
Television				
Laminator				
Telephone				
Photocopier				
Printer				
Scanner				
CDs				
DVDs				
CD-ROMs				
Other				

7.3. If you do use the ICTs facilities mentioned above, what are your reasons for using them? (Mark as many as applicable)

To support course of study	<input type="checkbox"/>
Leisure/general enjoyment	<input type="checkbox"/>
To access online library catalogue	<input type="checkbox"/>
Independent learning/Research	<input type="checkbox"/>
Other (Specify)	<input type="checkbox"/>

7.4 If you do not use the ICTs facilities mentioned above, which of the following are your reasons for not using them? (Mark as many as applicable)

Lack of ICTs knowledge and skills	
Insufficient ICTs facilities in the library	
Have access to the facilities elsewhere	
Not interested	
Other (Specify)	

Section C: Attitudes of users towards ICTs provision

8. How important do you think it is for public libraries to provide ICTs facilities?

- Very important [] Don't know []
 Not very important [] Quite important []
 Not important at all []

9. How important to you personally are public libraries ICTs facilities?

- Very important [] Don't know []
 Not very important [] Quite important []
 Not important at all []

10. Which of these statements most reflect your view of ICTs facilities in libraries?

- A vital service [] An add-on service, secondary to other library services []
 An unnecessary expense []

Section D: Library users' ICTs preferences

11. Which of the following ICTs do you prefer to use? (Mark as many as applicable).

- Computers [] Computer with Internet [] CD-ROMs [] CDs []
 Laminator [] Telephone [] Photocopier [] DVDs []
 Printer [] Scanner [] Television [] Other (specify).....

11.1 What are your reasons for preferring to use the above facilities?

.....

Section E: Accessibility of public libraries' ICTs

12. How accessible do you think ICTs in the library are to you?

Very accessible [] Not accessible []

12.1 If not accessible, what are the barriers to ICTs access (Mark as many as applicable?)

Time limit [] Fear and lack of knowledge of how to use the facilities []

Cost [] Insufficient facilities [] Unfavourable library hours []

[] Other (specify).....

13. Do you have access to computing facilities elsewhere apart from the library?

Yes [] No []

13.1 If yes, please indicate where: (Mark as many as are applicable)

Home [] Work [] Educational establishment []

Cybercafés [] Friend/relative's home [] Other (specify).....

14. If you encounter ICTs usage problems, whom do you consult?

Staff [] Computer books [] Other users [] Other (specify).....

Section F: Users' knowledge, skills, and availability of ICTs training programmes

15. Do you know how to use ICTs facilities in the library?

Yes [] No []

15.1 Which of the following ICTs skills do you have and how do you rate your proficiency in each.

ICT Skills	Very good	Good	Average	Poor
Internet search				
Computer typing				
Photocopying				
Printing				

Other (Specify)				
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16. Have you received training in the library on how to use public libraries ICTs facilities?

Yes [] No []

16.1 If yes, which of the following training have you received? (Mark as many as applicable)

Internet	
Microsoft Word	
Microsoft Excel	
PowerPoint	
Microsoft Access	
Other (Specify)	

Section G: Challenges experienced by users in using ICTs in public libraries

17. What are the challenges that you face in using ICTs in the libraries?

.....

.....

.....

17.1 In your view, how can such challenges be alleviated?

.....

.....

.....

Thank you for your time to participate in this study

Appendix E: Staff interviews

1. What ICTs facilities are available in Ekurhuleni libraries?
2. Are there programmes in EMM libraries aimed at training users on how to use ICTs?
 - 2.1 If yes, what programmes are available?
 - 2.2 If No, what interventions are available to ensure that users are ICTs literate?
3. What are the challenges that users face in utilising ICTs in the libraries?
 - 3.1 In your view, how can such challenges be alleviated?