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INYUVESI YAKWAZULU-NATALI

AN INVESTIGATION OF THE EXTENT OF AUTOMATION OF PUBLIC LIBRARIES IN SOUTH WEST NIGERIA

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Supervisor

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January 2017

DECLARATION

I, Olateju Abayomi Adeleke declare that:

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ABSTRACT

Automation of library services is an alternative to traditional methods of information handling. Library automation in many public libraries in Nigeria has affected both information space and practice. Inspite of the abundant benefits of library automation in libraries, many public libraries in Nigeria are yet to automate their services. For this reason, they are unable to offer excellent information services compared to their counterparts in developed countries. The implementation of library automated systems will significantly improve the services rendered by public libraries to the community, however the extent of automation remains unknown and under-researched. There is a dearth of literature on the automation of public libraries in South West Nigeria as most of the studies undertaken so far about library automation have tended to focus on academic and special libraries. This study sought to investigate the extent of automation in public libraries in South West Nigeria with a view to proffering proposals that would help improve the situation from practical, policy, infrastructural and human resource perspectives.

The study addressed two broad research objectives namely: 1) To examine the extent of implementation of Information Communication Technology (ICTs) in public libraries in South West Nigeria and 2) to investigate the factors influencing acceptance and use of ICTs in public libraries in South West Nigeria. Specifically, the following research questions were investigated: 1) What is the level of public library automation in South West Nigeria? 2) What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria? 3) What are the skills and competencies that library staff and patrons possess in the use of ICTs? and 4) What are the challenges librarians and patrons experience in managing automated systems?

The study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT). The post-positivist paradigm was used as the theoretical lens to underpin the study. The methodological approach adopted was the mixed method with survey research design. The population of study comprised library patrons and professional and paraprofessional staff drawn from three public libraries in South West Nigeria. Survey questionnaires and focus group discussions were triangulated to collect data from library patrons and professional/paraprofessional staff respectively.

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) to generate frequency counts, percentages, bar charts and cross tabulation. Qualitative data from the focus groups was analysed using thematic content analysis. Reliability was ensured by adherence to Dillman's suggestion which states that questions be reviewed by survey professionals. Validity was ensured in the study by adopting a mixed method approach. Mixed method guaranteed the success of the study as the quantitative method enriched the findings of the qualitative method. The study complied with the ethical protocol of the University of KwaZulu-Natal.

The findings of the study revealed that automation in public libraries in South West Nigeria was limited and at varying stages of development. The findings further revealed that performance expectancy, effort expectancy, social influence and facilitating conditions determined the acceptance and use of ICTs in the public libraries surveyed. Moreover, though the majority of library patrons and librarians were skilful in the use of ICTs, they had varying levels of competencies. The findings showed that there were several challenges hindering the effective use of ICTs in libraries. These challenges included but were not limited to unreliable power supply, inadequate ICT infrastructure absence of technical skills, negative attitude towards automation, absence of senior management support, use of inappropriate library software and technophobia.

The study proffers among other recommendations the creating of awareness about the need for the top management of the respective libraries to provide adequate budgets to ensure full automation of the public libraries' services; adopting best practices in automation from within and outside Nigeria in the implementation of library automation systems; developing and implementing relevant ICT policies to guide the adoption and use of automated systems in public libraries; putting in place capacity building programmes to equip staff and patrons with requisite skills to use library automated software; the recruitment process of library staff should emphasise possession of ICT skills as part of the requirement to be hired; and solar energy, inverters, standby power plants should be implemented as backups to the main electricity supply system.

abundantly. To many others whose names I am not able to mention, I say a big thank you and may the good Lord in his infinite mercy bless you all.

DEDICATION

This Thesis is dedicated to the Almighty God who strengthened, preserved and inspired me.

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List of Abbreviations

A	Agree
AAPOR	American Association for Public Opinion Research
AL	Average Level
ALA	American Library Association
ATM	Automatic Teller Machines
BC	British Council
BLCMP	Birmingham Libraries Co-operative Mechanisation Project
CCTV	Closed Circuit Television
CD-ROM	Computer Disc Read-Only Memory
CDS/ISIS	Computerized Documentation System-Integrated Set for Information Systems
C-TPB-TAM	Combined Theory of Planned Behaviour and Technology Acceptance Model
D	Disagree
DOI	Diffusion of Innovation Theory
EL	Excellent Level
ESS	Enterprise Social Software
FIIR	Federal Institute for Industrial Research
GLAS	Graphical Library Automation System
HL	High Level
ICT	Information Communication Technology
IDRC	International Development Research Centre
IFLA	International Federation of Library Association
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Centre for Africa
ILS	Integrated Library Systems
IM	Instant Messaging
IOSL	Ikeja Old Secretariat Library
LL	Low Level
LRCN	Librarians' Registration Council of Nigeria
MEDLARS	Medical Literature Analysis and Retrieval Systems
MM	Motivational Model
MPCU	Model of Personal Computer Utilization
NAD	Neither Agree nor Disagree
NCE	Nigeria Certificate in Education
ND	No Date
NIIA	Nigerian Institute for International Affairs
NLA	Nigerian Library Association
NS	Not Skilled
NUL	National University of Lesotho
OER	Open Educational Resources

OGSLB	Ogun State Library Board
OPAC	Online Public Access Catalogue
OSS	Open Source Software
OYSLB	Oyo State Library Board
PBC	Perceived Behavioural Control
PC	Personal Computer
PEOU	Perceived Ease of Use
PHD	Doctor of Philosophy
PLS	Partial Least Squares
PS	Proprietary Software
PU	Perceived Usefulness
RFID	Radio-Frequency Identification
RSS	Real Simple Syndication Feeds
SA	Strongly Agree
SAL	Simeon Adebo Library
SCT	Social Cognitive Theory
SD	Strongly Disagree
SEM	Structural Equation Modelling
SME	Small and Medium Sized Enterprises
SNS	Social Networking Sites
SP	Sample Population
SPSS	Statistical Package for Social Sciences
SSCE	Senior School Certificate Examination
TAM	Technology Acceptance Model
TP	Total Population
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TTF	Task Technology Fit
UK	United Kingdom
UKZN	University of KwaZulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
USIS	United States Information Service
UTAUT	Unified Theory of Acceptance and Use of Technology
VTLS	Virginia Technology Library System
VW	Virtual Worlds

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INTRODUCTION

1.1 Background to the study

The purpose of this study was to investigate the extent of automation of public libraries in South West Nigeria. Public libraries are libraries that are accessible by the public regardless of status, religion, educational background, race, age, or sex. They have a broad scope of tasks they offer compared to other types of libraries such as academic, school, private and special libraries. Their mandate is to serve the information needs of the public. These include children, youth, adults, handicapped and those who are incapacitated (Jibril, 2013). They are funded by the government (either at local, state or federal level) with tax-payers money. The services they provide are free (Iwhiwhu & Obotayire, 2012; Olarongbe, Adepoju, Akanbi-Ademolake & Pedro, 2013). Anyanwu (2001) and Hopper (2013) refer to public libraries as "The People's University". Opara (2008) points out that the intellectual life of any given community revolves around its public library, the absence of which will negatively affect the community in which it is situated both educationally, socially, culturally and otherwise. They are valued cultural institutions and they improve the worth of life in the community in which they exist (Scola, 2014).

Furthermore, public libraries are libraries that are sustained through public funding for public use and for the public good. Public libraries make use of materials in print, audio-visual and electronic formats in order to collect, preserve, organise, retrieve, disseminate, and communicate information, ideas and the creative product of the human imagination (Subedi, 2010). Public libraries provide the opportunity for personal, community development, artistic and scientific achievement through the selection, preservation, and dissemination of materials for education, lifelong learning, research, leisure, and recreation (Feather & Sturges, 2003). Public libraries are usually funded by the government, local communities and occasionally by non-governmental organisations; they are available for use by every member of the community irrespective of sex, educational status, language, nationality, religion, race, employment status. Besides, the services they offer are free of charge (Saliu, 2002).

The importance of public libraries is underscored by the UNESCO public library manifesto (1994:4), which asserts that the public library is the "local centre of information, making all

kinds of knowledge and information readily available to its users". A public library is a place where people source information to improve their lives. It is often referred to as "opportunity institutions" opening doors to, and for the disenfranchised (Mattern, 2014). Public libraries are powerful agents in bridging the digital divide. They provide access to the Internet; help members of the community with a resume or job search; provide information resources to aid local business; economic and workforce advancement; maintain current reference resources; render services to young children; provide access to historic materials and refer people to other community resources (Mattern, 2014; Zickuhr, Rainie, Purcell & Duggan, 2013). Public libraries play an important role in educating the society by acting as a means through which people get access to books outside their home. They provide support to citizens who are jobless, underprivileged, and those that have health challenges. In addition, they impart knowledge and inculcate reading habits among children and adults alike (Mattern, 2014; Mcharazo, Kauaria & Lahti, 2012; Prabhjeet & Paramjeet, 2015). No other institution, public or private, does a better job of reaching people who have been left behind in today's economy like the public library.

Zickuhr *et al*. (2013) in a study of the value of public libraries in America observed that residents attest to the fact that public libraries play a significant role in their day to day life. They promote quality of life and deliver many services that would have been difficult to locate elsewhere. Most Americans confirmed that they have had numerous positive skills by virtue of their use of public libraries located around their communities. They also believe that public libraries have done a good job in adopting recent technologies. Summarily, public libraries influence people in five major areas: education, social policy, information, cultural enrichment and economic development (Brophy, 2001)

1.2   History of library automation

Library automation is described as the application of information communication technologies (ICTs) in the day to day operations of the library (Boateng, Agyemang & Dzandu, 2014). Singh (2008) describes library automation as the use of automatic and semi-automatic data processing equipment to carry out traditional library routines such as acquisitions, cataloguing, and circulation. The concept 'library automation' is often used interchangeably with library computerisation, library mechanisation, digitisation and application of information

communication technologies (ICTs) in library operations and procedures (Obinyan & Unuabor, 2013; Ganguly & Bhattacharya, 2013).

The use of ICTs in the provision and management of library services has transformed the traditional library into automated, electronic, virtual, and digital library affecting both the information space and practice (Jan & Sheikh, 2011). The automated library offers numerous services to the patrons and satisfies their information needs beyond what the manual system can do. Through automation, there has been an increase in the number of patrons going to the library for various purposes (Ndum, Edem & Chinwe, 2012) and others have remote access to the library resources. Many others Google rather than visit the library (Kwanya, Stilwell & Underwood, 2012; Bertot, 2013). Automation makes it possible for librarians to accomplish tasks accorded to them within the shortest possible time as well as enhances their self-esteem and respect. Library automation has created new job opportunities in public libraries (Ndum *et al.*, 2012). Positions such as system analyst, system librarian, cyber-librarian and information technologist now exist in public libraries. Library automation provides a cheaper means of acquiring information materials; it enables generation of reports for improved decision making and effective management of the library; it enables rapid communication with other libraries; it improves the administration of physical and financial resources; and it has made it possible for libraries to share and exchange resources (Iglesias, 2013; Aina, 2003). Library automation enhances efficiency and effectiveness of the librarian.

Several commercial integrated library systems (ILS) are available to suit the needs of different sizes of library. The choice of an ILS should be methodically decided after rigorous evaluation of capabilities of each module, experimenting with demos of the software, learning from experiences of other users, assessing vendor stability, frequency of upgrades, support and maintenance, dependability, and track record of the vendor (Mulla & Chandrashekara, 2011; Udoh-Ilomechine & Idiegbeyan-ose, 2011).

The history of library automation activities can be traced to the 1950s and 1960s. These activities began in North America and Europe, especially in University environments. Hopkinson (2009) in this regard opined that majority of library systems were developed in the United States by Universities for their own use and later made accessible to a broader audience. An example is Dynix which was developed for a university library and was later transferred at a cost to other universities, public libraries and special libraries around the world.

Tedd (1977) divided the stages of development of computer based library into three phases; experimental system phase; local systems phase and cooperative systems phases. The experimental phase of library automation was in the 1960s. It was an era when libraries in North America and the United Kingdom started experimentation with the use of computers. Camden and West Sussex public libraries were involved in this phase. Librarians made use of the computer as a tool in the organisation of many of the library's procedures even though the computers were majorly offline. During this period, a number of systems evolved from the eighty-column punched-card data processing systems (Silvestre, 2010). According to Silvestre (2010), the systems developed during this phase were created by Herman Hollerith to assist in the processing of data generated from the 1890 United States census. However, the system did not succeed majorly because of the following reasons: inadequacies in the computer technology of this period; librarians were not adequately informed on the use of the computer-based systems; computer vendors did not have a thorough understanding of the needs of librarians (Tedd, 1977).

The local systems phase was in the 1970s and was characterised by the use of computers in organising library operations. Computers were very significant and valuable in libraries. They were used to automate library operations such as updating records, charging and discharging of information resources, generating reports, managing procurement and subscription and library cooperation. During this period, the rise in the use of computers by many libraries was based on; increase in research and development; improved communication between software inventors and librarians and improvements in computer technology. In addition, the escalation of new library systems and diverse approaches brought about massive developments in libraries.

The co-operative systems phase was in the 1980s. It was characterised by the advent of off-the-shelf integrated systems which offered circulation, acquisitions, serials control, cataloguing and online public access with all modules sharing a common database. The co-operative systems phase was a period that recorded a rise in library cooperation and consortia among libraries developing computer-based systems. The Birmingham Libraries Co-operative Mechanisation Project (BLCMP) is an example of a co-operative system that was founded in the United Kingdom. The major aim of BLCMP was to relieve libraries of the huge cost of automation. The cooperating libraries shared a fraction of the cost of automation. The library

cooperative society's model encouraged libraries to adopt computer-based systems (Mutula, 2004).

Ramzan and Singh (2009) categorised the development of library automation in stages which contrast closely with Tedd's phases presented above. According to these authors, the first stage of library automation was the trial stage. It is traced back to the 1960s and was characterised by in-house developed systems. The second stage was in the 1970s and was characterised by the introduction of off the shelf turnkey systems, while the final stage began in 1980s which saw the advent of the off the shelf partially integrated systems offering cataloguing, circulation, acquisition, serials control and online public access with all modules sharing a common database. The 1990s experienced remarkable developments in the use of ICTs in libraries such as the Internet, World Wide Web protocols, information retrieval standards, fully integrated library systems and online databases. The post-2000 era in library automation was characterised as the era of digital libraries, virtual collections, paperless environment and round the clock instant remote access to limitless resources (Ramzan & Singh, 2009).

Various authors have also corroborated the stages and phases of development of library automation discussed above. Mutula (2004) points out that during the (1950s and 1960s) (experimental/trial phase) mainframe computers of parent organisations were used to develop library systems with the aid of mainframe-based programming languages such as BASIC, FORTRAN, PASCAL, etc. During this period, extensive mechanisation programs were created by database producers and these led to online information retrieval systems. Notable among the most primitive computer based systems, according to Hammer (1976), were those established at the Naval Ordnance Laboratory, Silver Spring, Maryland in 1959 and put into operation by Western Reserve University for the American Society for Metals. Some of the pioneer institutions that made use of these systems include University of Minnesota, London Bodleian Library, the University of British Columbia and the University of Sydney (Grosch, 1979).

According to Lancaster and Owen (1976) major systems in the US emerged in the early 1960s (experimental/trial phase) with the most significant being the services introduced by the armed services technical information agency; the national aeronautics and space administration and the national library of medicine in Bethesda which launched their Medical Literature Analysis and Retrieval Systems (MEDLARS) services in 1963. Mutula (2004) stressed that as early as

1964, the national library of medicine was already making use of computers in managing information services such as photo composition.

The development of library automation presented above focused on developed world especially Europe and North America. However, it is important to report that in developing countries, library automation was absent in the 1950s and 1960s. Meaningful, library automation began in the 1980s (Mutula, 2004) when information technology departments and computer centres were mostly responsible for the automation of libraries. Some other library automation initiatives happened in international organisations such as British Council, United States Information Services, United Nations Educational, Scientific and Cultural Organisation (UNESCO) and International Development Research Centre (IDRC) (Mutula, 2004).

During the late 1980s, Computerised Documentation System-Integrated Set for Information Systems (CDS/ISIS) library software developed by UNESCO was given free of charge to libraries in Africa and in other developing countries (Hopkinson, 2005). As a result of the development of CDS/ISIS, many libraries were able to automate their services using this free software. Later, library automation in Africa moved a notch higher through the use of databases distributed on Computer Disc Read-Only Memory (CD-ROM). The CD-ROMS contained databases, software and information that were previously only available in print (Zhang, 1998). This made information more accessible to users (Davies, 2012). The 1990's gave birth to the use of networks. This made it possible for librarians in Africa and their clients to connect to the libraries from their homes and offices.

Though library automation in Sub-Saharan Africa has gained impetus over the last decade, most public libraries are yet to fully automate their information services. Library automation projects in most parts of Africa are concentrated in University libraries which are comparatively well-resourced than other public institutions (Mutula, 2012). Hopkinson (2009) in a study of library automation in developing countries identified some problems militating against library automation in Africa. They include expensive nature of the hardware, erratic power supply and lack of trained personnel. Similarly, Chisenga (2006) and other scholars identified other challenges affecting library automation in Sub-Saharan Africa to include lack of adequate funding; lack of commitment from the government; paucity of qualified staff; inadequacies in existing ICT resources and lack of policies (Ani, Esin & Edem, 2005; Kumar & Biradar, 2010; Ugwu & Onyegiri, 2013). In Kenya, it was reported that library automation is faced with challenges of very lean or non-existent budgetary allocations for automation,

shortage of ICT skilled personnel, lack of government support, lack of relevant policies on national information infrastructure (Wanyoike, 1996).

The challenges of library automation have been documented also in the developed world. Hammer (1976) states that early stages of computer use in libraries were a difficult and frustrating period but also rewarding. However, as the years progressed, libraries began to have better experiences with computer-based systems until the birth of the Internet in the 1990s. Kaul (1999) summarises the progress of library automation in table 1.1 below. It covers the historical development that has been presented in this section.

Table 1. 1: History of Automated Library Systems (Source: Kaul, 1999)

Year	Milestones in Development of Automated Library Systems
1940-1949	Semi-mechanical applications including edge-notched cards, optical coincidence, peek-a-boo cards.
1950-1959	Utilisation of punched cards, data processing apparatus, early computers, and micro image searching systems.
1960-1969	Application of all-purpose digital computers, feasibility studies of online interactive and advance micro image systems, experiments in library networking.
1970-1979	The design of online systems and conversion of batch systems into online mode, the growth of library network and databases.
1980-1989	Intensive utilisation of online systems, networks, mini and microcomputers, optical disks, CD-ROMs, FAX etc.
1990s	Use of Internet and library networks with the aim of attaining higher levels of computer application such as recording through electronic media, artificial intelligence etc.

1.3 Trends in public library automation

Public libraries worldwide have undergone remarkable revolution from the traditional ways to the present digital age. It is perhaps the only industry that has been affected uninterruptedly by technological changes yet continues to adapt for the benefit of humankind (Kadiri & Adetoro, 2012). Many public libraries in the United Kingdom now operate in virtual environments. The libraries have embraced several recent technologies which make it possible to offer numerous services to library patrons such as the use of Web 2.0 to promote services and communicate with users; provision of downloadable content such as e-books, audiobooks; 24/7 online services such as renewals, making reservations and using social networking sites. The state

library of Carolina, for instance, has been using Myspace sites with friends ranging from members of cultural organisations, librarians, students, and members of the public. Public libraries also make free Wi-Fi services available to their patrons (Waller & McShane, 2008; Macdonald, 2012). Similarly, the New York public library supports a mobile OPAC and allows users to browse library locations. The District of Columbia public library has also developed an iPhone application that includes a mobile OPAC, the ability to place items on hold, as well as provide information on hours and locations of local libraries (Sood & Mukherji, 2013).

The heavy presence of technology and the Internet in the United States has changed the reading practices of the residents and their rapport with public libraries (Rainie, 2014). Half of Americans now possess a tablet or e-reader. Public libraries have reacted to these developments by escalating their digital services to the public (Rainie, 2014). Similarly, the Canadian public library through the use of new technologies gives opportunity to the public to read newspaper publications from around the world and to communicate with friends and relatives by electronic mail (Gilton, 2012). Furthermore, public libraries are making use of instant messaging (IM) for the provision of reference services, where patrons can now synchronously communicate with librarians as much as they would in a face to face reference context (Arora, 2012). Real Simple Syndication Feeds (RSS) are created by libraries for patrons to subscribe. This makes it possible for them to be informed about updates on new arrivals in a collection, new services and new content in subscription database (Arora, 2012). Public libraries have also adopted the use of blogs as a tool for promoting, publicising and for outreach purposes to library patrons. Libraries around the world now make use of Vodcasting (delivering video content) to library patrons and Podcasting (delivering audio files) to numerous users.

Public libraries make use of Twitter to reach library patrons and librarians. This has helped public libraries to meet the diverse needs of thousands of patrons. The Caldicot library in the United Kingdom is an example of one of such libraries that have adopted the use of Twitter as a means of communication to its users. The library tweets about delightful books, events, happenings within the library and the local community within which the library is situated (Monmouthshire Libraries, 2011). Hitherto, libraries have provided "face to face" reference services to her patrons, but in recent times, online reference services are being provided to patrons. Online chat software is used for queries and answers. An example is a national online reference service (AskNow). It is used by public libraries in Australia and is capable of answering about 35,000 queries in a year (Fallows, 2005).

Libraries in developed countries are becoming more aware of the need to adopt various automated systems and are publicising this through a variety of mediums. Librarians have acknowledged the advantages of using Web 2.0 to enable effective user participation. Public libraries in Australia have held conferences with the themes on Library 2.0 and Web 2.0. This further propagates the use of recent technologies in carrying out their duties (Waller & Mcshane, 2008). In a bid to promote digital services, public libraries in the United States have also adopted mobile libraries to encourage the use of e-books by her citizens (Kowalczyk, 2015). Similarly, the Jiří Mahen library in Brno, Czech Republic is known as the largest public municipal library in Moravia and the second largest in the Czech Republic. The public library brings library services close to her citizens by converting old tram cars into a dynamic mobile library (Kowalczyk, 2015). The tramcar travels about 70 km per day educating citizens about library services, most essentially, on the importance of digital libraries.

Figure 1.1: Tram Library (Source: Kowalczyk, 2015)

In the context of Nigeria, the University of Ibadan was a pioneer in library automation and is now a reference point for automation in the country (Ekpenyong, 1997). As part of the efforts to promote tertiary education in Africa, the MacArthur Foundation in Chicago has been making grants available to Nigerian Universities since 1989. The Foundation has awarded more than $91 million to date. The University of Ibadan, Bayero University, Ahmadu Bello University

and the University of Port Harcourt were recipients (MacArthur foundation, 2008). As a result of this funding, it was possible for the University of Ibadan to sign up to Virginia Technology Library System (VTLS) a commercially available package developed originally in the US. Similarly, in 1989, the World Bank assisted 30 Federal Universities in Nigeria by funding them to acquire current information materials and equipment (including microcomputers and their accessories) to enable them to have access to modern technology just like their counterparts around the globe (Ekpenyong, 1997). The public libraries have not largely benefited from the funding the university libraries have received from the private sector. Consequently, as Issak (2000) asserts, public library services in Nigeria have declined dramatically over the past few years due to poor economic and political situations in the country. Although some public libraries have incorporated the use of ICTs into the services they render, the extent of adoption is unknown and this creates a gap which this study intends to address.

1.4   Site of the study

The Federal Republic of Nigeria usually referred to as Nigeria is a country on the coast of West Africa and is bordered by Benin, Cameroon, Chad, and Niger; it shares maritime borders with Equatorial Guinea, Ghana, and São Tomé and Príncipe. In addition, she has an area of 923,768 km². Nigeria is known to be Africa's most populous country because of her population of 183.5 million (United Nations, 2015). The highest regions are the Jos Plateau at 1,200-2,000 meters above sea level and the mountains along the border with Cameroon. The capital city is Abuja located in the centre of the nation, while Lagos is the primary port, economic hub and the largest city (Nigeria, N.D). The Country is divided into 36 states, one federal capital territory and 774 local governments.

Nigeria is made up of six geo-political zones. They are South West, South East, North West, North East, South South and North Central (Adeniran, 2011). South West is one of the geopolitical zones and is made up of six states. They are Lagos, Ogun, Osun, Ondo, Ekiti and Oyo States. The total population of the South West region is 27,581,992 (Anyaeche, 2007). The region falls on latitude 60 to the North and latitude 40 to the south. It is marked by longitude 40 to the West and 60 to the East. It is bounded on the North by Kogi and Kwara states, in the East by Edo and Delta states, in the South by the Atlantic Ocean and in the West by Republic of Benin (Durojaiye, Yusuf & Balogun, 2014). It is known to be the fastest developing economic bloc in the country through its highest contribution to the non-gross domestic product (Odunlami, 2014).

South West Nigeria has been purposively selected for this study because the first public libraries in the country were founded in this region (Saliu, 2002). By virtue of its pioneering role in public libraries, this region is presumed to have made progress in library automation.

Within South West geopolitical region with a total of six states, three states namely Lagos, Oyo and Ogun State were purposively selected for this study because of their accessibility. Ogun State Library Board referred to as Simeon Adebo Library (SAL) has its headquarters in Abeokuta, the state capital. Apart from the headquarters, there are four other branches spread across the state. Oyo State Library Board (OYSLB) has its headquarters in Ibadan the state capital. Like Ogun state, Oyo state also has four branch libraries in different locations within the state. Similarly, Lagos State Library Board usually referred to as Ikeja Old Secretariat Library (IOSL) has ten branch libraries. Due to time constraint and cost implication of carrying out the study in all the branch libraries, the study was limited to the headquarters of Lagos, Ogun and Oyo state public libraries. As already pointed out above, the libraries selected for the study are located in the headquarters of the respective states which are more accessible by road and telephone network. Figure 1.2. illustrates the map of Nigeria showing the South Western States (Naijaintel.com, 2013).
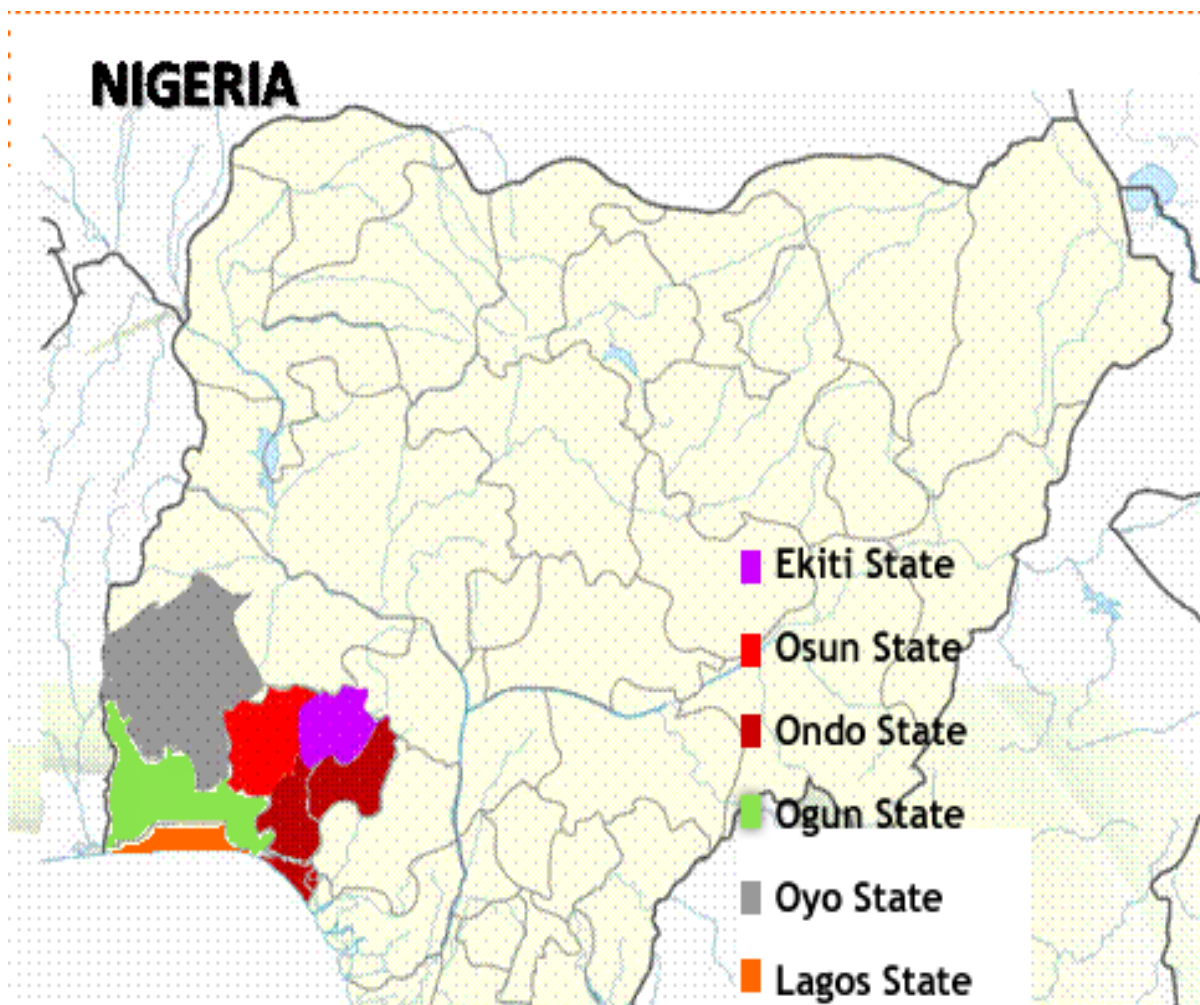
Figure 1.2: Map of Nigeria showing the South Western States (Source: Naijaintel.com, 2013).

1.5   Statement of the problem

Automation of library routines and services has long emerged as an alternative to traditional methods of information handling (Mohammed, 2007, Ukpanah & Akpan, 2012). It has affected both information space and practice. Although the mission of the library has not changed, the modus operandi, tools and techniques have undergone rapid transformation (Holmberg, Huvila, Kronqvist-Berg & Widén-Wulff, 2009) to the point where libraries do not require a building to operate (Fox & Urs, 2002). Library automation also changed the manner in which librarians communicate, interact, acquire and share knowledge with users (Anjanappa, Kattimani & Jange, 2009).

Through library automation, there has been an increase in library patronage. Patrons are attracted to the library for various purposes ranging from research and learning to recreation,

among others (Ndum, Edem & Chinwe, 2012). Automation makes it possible for the librarian to accomplish operational tasks within the shortest possible time (Kumar & Kar, 1995). It has also brought about an increase in the self-esteem and respect accorded to the librarian. Before the advent of automation, the layman referred to a librarian as a bookkeeper or bookshop attendant who sits down all day staring at books. The librarian was perceived as someone of little importance to the society (Ndum *et al.*, 2012). With the advent of automation, a librarian is now perceived as an expert who utilises various forms of technology to carry out his/her duties.

In addition, library automation has created new job opportunities (Ndum *et al.*, 2012). Positions such as system analyst, system librarian, cyber-librarian and information technologist now exist in libraries. Library automation also provides a cheaper means of acquiring information materials. It has also made it possible for libraries to share and exchange resources making information more readily available, saving costs and preventing duplication of efforts (Nwalo, 2006; Aina, 2003).

Despite the numerous benefits brought by library automation to libraries, many public libraries in Nigeria as observed by Omekwu (2006) are yet to automate their services. They still utilise the obsolete manual processes in carrying out library operations. For this reason, they are unable to offer efficient and effective information services compared to their counterparts in advanced countries of the world (Omekwu, 2006). Nigerian public libraries are not an island of their own; they must be part of the global information system and should, therefore, respond to the challenges of the electronic revolution like their counterparts in the developed world (Eze, 2013).

The implementation of library automated systems can significantly improve the quality of services rendered by public libraries to the community. Studies in reviewed literature (Eze, 2012; Eze, 2013; Emojorho, 2011; Issak, 2011; Ebiwolate, 2010 and Jibril, 2013) have highlighted the positive contribution of adopting automation and efforts made so far to promote automation in public libraries in Nigeria. However, the extent of automation remains unknown and under-researched. There is a dearth of literature on the automation of public libraries in South West Nigeria. Most of the studies undertaken so far about library automation have tended to focus on academic and special libraries (Ahenkorah-Marfo & Borteye, 2010).

This study, therefore, sought to investigate the extent of automation in public libraries in South West Nigeria with a view to proffering proposals that would help improve the situation from practical, policy, infrastructural and human resource perspectives.

1.5.1 Research objectives

The study sought to address two broad research objectives namely:

1. To examine the extent of implementation of ICTs in public libraries in South West Nigeria.

2. To investigate the factors influencing acceptance and use of ICTs in public libraries in South West Nigeria.

1.5.2 Research questions

The study sought to address the following research questions:

1. What is the level of public library automation in South West Nigeria?

2. What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria?

3. What are the skills and competencies that library staff and patrons possess in the use of ICTs?

4. What challenges do librarians and patrons encounter in managing and using automated library systems?

1.6 Significance of the study

There is a dearth of literature on the automation of public libraries in Nigeria (Chisenga, 2004; Amekuedee, 2005; Manuh & Budu, 2007; Ahenkorah-Marfo & Borteye, 2010). Public libraries have been selected for this study for two main reasons: 1) they are open to everybody regardless of status, religion, educational background, age or sex. 2) Public libraries have the broadest scope of tasks they offer compared to other types of libraries such as academic, school and special libraries. The importance of public libraries need not be overemphasised. They are referred to as "The People's University" (Anyanwu, 2001) because they are open to everybody in society. Opara (2008) points out that the intellectual life of any given community revolves around its public library, the absence of which will adversely affect the educational, social and cultural sectors of the community. Opara (2008) further asserts that public libraries are

veritable instruments for both formal and informal education; their existence is for the overall advancement of both the individuals and the entire community.

This study aimed at uncovering the status of automation of public libraries in the region. The outcome of the study is expected to provide evidence based data upon which relevant public library automation policies can be formulated. The study also provides data that would inform budget allocation for ICT infrastructure development for library automation, human resource development and staffing for public libraries in Nigeria. Using the UTAUT model, the study contributes to literature on the factors that influence the adoption and use of automated systems in public libraries from a developing country such as Nigeria.

1.7   Delimitation of the study

The study was conducted in South West Nigeria which is one of the six geopolitical zones in Nigeria. South West Nigeria was purposively selected because the first set of public libraries was established in this region. The region has, therefore, a long history of public library services provision. The study was restricted to three states out of the six states in the South West zone. The three states are Lagos, Oyo and Ogun respectively. The three states were selected because they were the first to be established within this geopolitical zone and have well established public library services. The study was also restricted to only the headquarters of the public libraries boards. This was due to accessibility, time constraint and the cost factors in conducting the study. The study was conducted at a time when librarians in one of the states had not been paid their salaries for several months and as a result, only a few were willing to participate in the study. The study was also limited to public libraries only and did not cover other types of libraries such as academic, national or research libraries. Public libraries' services are open to any member of the society compared to academic, national and research which tend to focus on specialised clientele.

1.8   Structure of the thesis

The thesis comprises seven chapters. Chapter one provided an introduction; background to the study; history of library automation; trends in public library automation; site of the study; statement of the problem; research objectives; research questions, the significance of the study; delimitation of the study and structure of the thesis.

Chapter two presented the theoretical framework that underpinned the study. Different theories that have been adopted in the past to investigate the adoption and use of ICTs were discussed. Among these theories are UTAUT, C-TAM&TPB, TAM, TRA, TPB, MM, SCT, DOI and MPCU. The UTAUT theory was selected to underpin the studies. The choice of UTAUT was because it has been found to outperform all other technology adoption theories. It is also the most recent theory for technology adoption and it has been found to be highly robust and parsimonious.

In chapter three, empirical and theoretical literature was reviewed. The literature reviewed was organised according to themes derived from the research questions and UTAUT constructs (performance expectancy, effort expectancy, social influence and facilitating conditions). The chapter presented broader issues such as the global status of library automation; status of library automation in Sub-Saharan Africa; integrated library systems; factors influencing automation of public libraries in South West Nigeria; skills needs of librarians and patrons; and challenges of managing automated library systems. The literature reviewed was sourced from books, journals, conference proceedings, technical reports, dissertations and more.

Chapter four examined the research methodology that was adopted for the study. The chapter focused on research paradigms, research approach, research design, the population of study, sampling procedure, validity and reliability, data collection procedures, data analysis and presentation, ethical clearance and summary. The post-positivist paradigm was adopted for the study. A combination of quantitative and qualitative methods usually referred to as mixed method was adopted. Survey research design was used for the study because it is a preferred method in social science research and a valuable tool for assessing opinions and trends. The population of the study consisted of library patrons, para-professional librarians and professional librarians in Oyo, Ogun and Lagos State public libraries. Krejcie and Morgan table was used to determine sample size and systematic sampling technique was used to select participants for the study. The entire population of professional and para-professional librarians

in all three libraries were involved in the study. Data was collected through the use of a structured questionnaire and focus group discussion. Quantitative data was analysed using SPSS. Results were presented in frequency counts, percentages, bar chart and cross tabulation. Reliability was ensured by adopting a method suggested by Dillman (2000) which states that questions should be reviewed by survey experts. Smith and Bowers-Brown (2010) emphasised that the use of triangulation strengthens the validity of the research. Validity was ensured in the study by adopting a mixed method approach. Mixed method guaranteed the success of the study as the qualitative method enriched the findings of the quantitative method. Ethical requirements as set out by the University of KwaZulu-Natal ethics policy were strictly adhered to.

Chapter five was dedicated to the analysis and presentation of findings derived from the qualitative and quantitative data. Findings revealed that the libraries had basic ICT facilities that were used in the performance of their day to day routines. Findings further revealed that the extent of automation of public libraries in South West Nigeria was low. Even though some services had been automated, others were yet to be automated and those that were automated were either at their initial stages of automation or partially automated.

Chapter six discussed the findings of the study using extant literature and theory. The findings suggested that four major constructs of UTAUT (performance expectancy, effort expectancy, social influence and facilitating condition) influenced the adoption and use of automated systems in the libraries studied. Furthermore, the majority of library patrons and librarians possessed the necessary skills needed to make use of ICTs in the libraries. Findings also revealed that librarians and patrons faced several challenges in the adoption of ICTs. Suggestions were given on how these challenges could be overcome. The contents of chapter 7 are presented in section 7.3.

THEORETICAL FRAMEWORK

2.1   Introduction

A theoretical framework is a useful tool that supports research (Swanson, 2013; Grant & Osanloo, 2014). It presents and defines the theory that explains why the research problem under study exists. The theoretical framework connects the researcher to existing knowledge and makes research findings meaningful and generalizable (Imenda, 2014; Nyaberi & Mwangangi, 2014); it is the foundation from which all knowledge is created for a research study. It serves as the structure and support for the justification of the study, the problem statement, the objectives and the research questions. In addition, it offers a grounding base, or an anchor for the literature review and most essentially, the methodology and data analysis (Grant & Osanloo, 2014).

Technology acceptance is an important area of research. Several models and theories have been proposed to predict information technology acceptance, with each theory having diverse acceptance determinants (Akbar, 2013; Alwahaishi & Snasel, 2013; Venkatesh *et al*., 2003). The Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the models that is widely used to investigate technology acceptance and adoption and is therefore chosen to underpin this study. It was developed from eight models of acceptance and use of technology namely:

- Technology Acceptance Model (TAM)
- Theory of Planned Behaviour (TPB)
- Theory of Reasoned Action (TRA)
- Diffusion of Innovation Theory (DOI)
- Motivational Model (MM)
- Social Cognitive Theory (SCT)
- Model of Personal Computer Utilisation (MPCU)
- A combination of Technology Acceptance Model (TAM) and TPB Model (CTAM & TPB)

2.2 Technology Acceptance Model (TAM) (Davis, 1986)

The Technology Acceptance Model often referred to as TAM was developed by Davis in 1986 through the adaptation of TRA. It suggests that two major factors influence user's decision to accept and utilise new technologies. These factors are perceived usefulness and perceived ease-of-use (Davis, 1989).

Perceived Usefulness (PU) is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989:320).

Perceived Ease of Use (PEOU) is "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989:320). The TAM is diagrammatically presented in Figure 2.1 below.
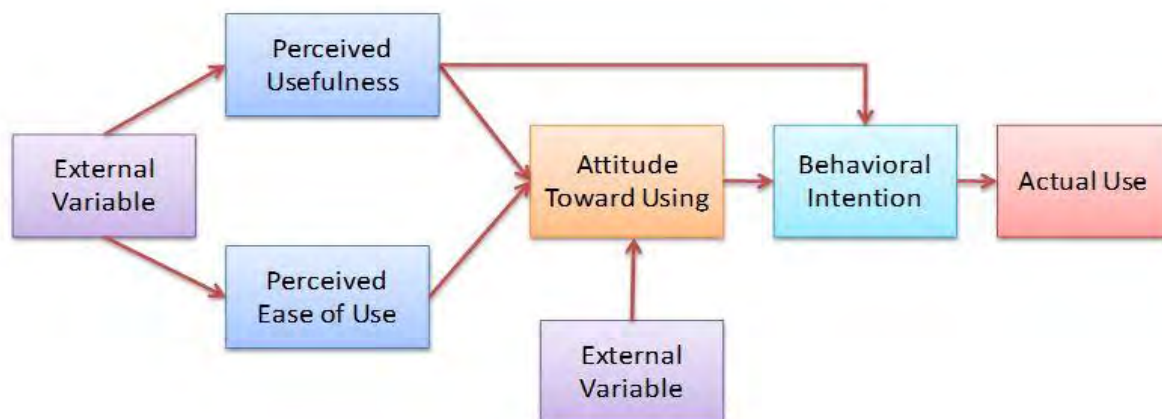
Figure 2.1: Technology Acceptance Model (Source: Davis *et al.,* 1989)

TAM has extensively been used to underpin studies on acceptance and use of new technologies and has emerged as the predominant model of choice. This resulted in its extension by Venkatesh and Davis (2000). The extension is referred to as TAM2. It was used to explain perceived usefulness and usage intentions in terms of social influence (subjective norms, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, perceived ease of use) (Venkatesh & Davis, 2000). TAM2 was tested in both voluntary and mandatory settings using longitudinal data collected from four different organisations. Constructs were measured at three points in each organisation. It was discovered that the extended TAM was intensely supported in all four organisations and at three points of

measurement: pre-implementation, one-month post-implementation and three months post implementation (Venkatesh & Davis, 2000).

Sheikhshoaei and Oloumi (2011) applied TAM to study factors that determine the acceptance of technologies by librarians in engineering faculties of public Universities in Tehran, Iran. The survey method was used and data was collected by means of questionnaires, which were administered to 160 librarians. Findings revealed that constructive factors of TAM (perceived usefulness and perceived ease of use) were considered to have the most potential for studying information technology acceptance. In addition, these factors have a great influence on the attitude of librarians to use information technology and therefore influence their intention to use them effectively.

Similarly, in a survey of four hundred and twenty-one (421) students, Edmunds, Thorpe and Conole (2012) applied TAM to explore the use of information and communication technology (ICT). Findings showed that perceived usefulness and ease of use are vital aspects of students' attitudes towards technology. Edmunds *et al*. (2012) also discovered that TAM is a robust model and can be successfully used to underpin studies on students' attitude towards adopting information communication technologies.

Likewise, Spacey, Goulding, and Murray (2004) examined the attitudes of public library staff towards the Internet in the United Kingdom. TAM was used as a theoretical framework to underpin the study. Data was gathered through the combination of qualitative and quantitative methods. Fourteen public library authorities participated in the research and 1,870 surveys were distributed. The findings revealed that the use of TAM was successful in capturing the attitude of public library staff towards Internet use. In addition, it provided a reasonable indication of future behaviour. Furthermore, the model provided ample data for a detailed statistical analysis of the different dimensions of attitude at play in a specific work context and was also valuable in emphasising aspects of attitude that were related to staff's current use and intention to use the Internet in the future.

Park, Roman, Lee and Chung (2009) examined the factors that influence people's adoption and use of digital libraries in 16 institutions in Africa, Asia and Central/Latin America. They tested the applicability of the TAM in developing countries' contexts. Questionnaires were distributed to 1370 respondents and findings revealed that perceived ease of use of the digital library had a significant effect on perceived usefulness; which eventually led to behavioural intention to

use such a system. They recommended that in designing, implementing and operating digital library systems, external variables that have an effect on perceived ease of use and usefulness should be considered as vital factors. This would assist in the reduction of discrepancy between system design and local users' realities and further enable the successful adoption of digital library systems in developing countries.

Several scholars have not only revised the structure of TAM but also added external constructs and mediators. Aharony (2013), in an enquiry into the attitudes of librarians towards mobile services in Israel, used the TAM. Librarians in public, academic and special libraries were involved in the survey and data was gathered by means of a questionnaire. The findings emphasised the usefulness of TAM in technology adoption studies and revealed that perceived ease of use and perceived usefulness are two core variables that may predict librarians' behavioural intention to use mobile services in the library. However, they added personal innovativeness and smartphone usage to the constructs of TAM. The author recommended that library heads who desired to implement additional mobile services should put into consideration its simplicity, attractiveness and efficiency. In addition, librarians should be exposed to the benefits as well as ease of use in using mobile services to increase their experiences with mobile devices. Furthermore, library heads should encourage librarians that have negative attitudes by way of organising training programs that would reduce their level of antagonism, fear and uncertainty.

Jordan, Al Ziadat, Al-Majali, Al Muala and Khawaldeh (2013) used an extension of TAM. It was extended by two independent variables, trust and awareness. Questionnaires were distributed among graduate students of M'utah University. Findings showed that there was a significant relationship between trust, awareness and perceived ease of use, perceived usefulness and attitude towards e-commerce.

Ongena, Wijngaert and Huizer (2013) also conducted a theoretical and empirical analysis to describe factors influencing individuals' intention to use an online audio-visual heritage archive service. They extended the TAM with the constructs of perceived enjoyment, nostalgia proneness and personal innovativeness. Data was collected via a web survey involving 205 respondents. Findings revealed that perceived enjoyment is more significant in predicting users' acceptance of technology than perceived usefulness. Nostalgia also had a strong effect on behavioural intention to use the service. They concluded that hedonic characteristic

(enjoyment) rather than instrumental value (usefulness) determine the acceptance of an audio-visual heritage archive service.

Although TAM has been used predominantly in technology adoption studies, it has been criticised by several scholars. The criticisms include its "questionable heuristic value and limited explanatory and predictive power, triviality and lack of any practical value" (Priyanka & Kumar, 2013:147). Benbasat and Barki (2007:211) also noted that TAM "has diverted researchers' attention away from other important research issues and has created an illusion of progress in knowledge accumulation". In addition, several efforts by scholars to expand TAM to suit various information technology studies has resulted in a state of theoretical disorder and confusion. Furthermore, Echeng, Majewski and Mesto (2013) described TAM as being invalid across cultures. Bagozzi (2007) maintained that the shortcomings of TAM reside in the following; "the absence of a sound theory and method for identifying the determinants of PU and PEOU, as well as other bases for decision making, the neglect of group, social, and cultural aspects of decision making, the reliance on naive and over-simplified notions of affect or emotions, and finally the over-dependence on a purely deterministic framework without consideration of self-regulation processes". The aforementioned criticisms and limitations of TAM model make it unsuitable for this study.

2.3   Theory of Planned Behaviour (TPB) (Ajzen, 1991)

The theory of planned behaviour often referred to as TPB was developed by Ajzen in 1988. It is an extension of the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). It tackles TRA's limitations in dealing with behaviours over which people have incomplete volitional control (Ajzen, 1991). TPB was developed to incorporate perceived behavioural control (PBC) construct in predicting behaviour. PBC was derived from Albert Bandura's (1977, 1997) concept of self-efficacy (Ajzen, 1998).

According to the TPB, behaviour is driven by behavioural intentions where behavioural intentions are a function of attitude toward the behaviour and subjective norms surrounding the performance of the behaviour. For accurate prediction, the measures of intention and perceived behavioural control must be compatible with the behaviour that is to be predicted (Ajzen, 1988).

The theory of planned behaviour postulates three conceptually independent determinants of intention. These include attitude, subjective norm and perceived behavioural control. Attitude according to Ajzen (1991) relates to the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question. Subjective norm reflects an individual's perception of whether people important to the individual think the behaviour should be performed, while perceived behavioural control refers to people's perception of the ease or difficulty of performing the behaviour of interest (Ajzen, 1991).

The TPB has two major strong points. Firstly, it is parsimonious; in order to achieve exact prediction of behaviour, only a small number of variables are required for measurement. Secondly, it provides clear procedures on how to measure cognitions specified by the model in order to ensure predictive precision (Ajzen & Fishbein, 1980). Figure 2.2 illustrates the TPB.
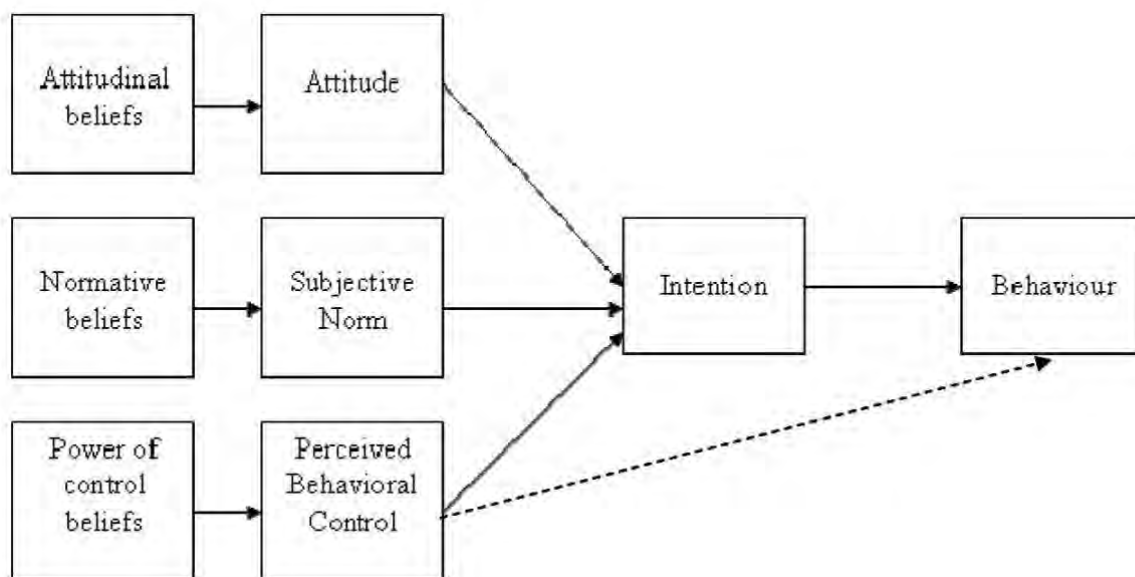
Figure 2.2:   Theory of Planned Behaviour (Source: Armitage & Conner, 2001)

A number of researchers have used the TPB to predict and understand people's intentions to adopt ICTs. In an empirical study of consumers' attitude and intention towards reuse of e-services, Abadi and Gharibpoor (2012) applied the TPB. They adopted structural equation modelling method (SEM) to evaluate attitude and intention of buyers of electronic tickets. Data was collected through the use of questionnaires which was administered to 95 students in Iran. Findings revealed that the quality of e-services affected the attitude and intention towards

reusing e-service. It was also discovered that subjective norm and behavioural control negatively affected users' attitude and intention to use e-service. Users continued to reuse e-services even when their friends and families did not accept it. They recommended that improving e-service quality will have a positive influence on subjective norms and behavioural control.

Similarly, Cheon, Lee, Crooks and Song (2012) adopted the theory of planned behaviour to study mobile learning readiness in higher education in Southwest, United States. Self-report data from 177 college students were analysed using structural equation modelling. Findings revealed that the TPB was very useful in describing college students' acceptance and use of m-learning. More precisely, attitude, subjective norm, and behavioural control had a positive influence on their intention to adopt mobile learning.

Furthermore, Yousafzai, Foxall and Pallister (2010) carried out an investigation into the extent to which TRA, TAM and TPB are predictive of consumers' behaviour in the context of Internet banking. They observed that the TPB had a slightly higher explanatory power because of its inclusion of constructs such as subjective norm and perceived behavioural control. This was also corroborated by Taylor and Todd (1995). Irrespective of its popularity, the TPB has been the target of much criticism and debate. Some researchers rejected it out rightly and maintained that it was inadequate in explaining human social behaviour (Ajzen, 2011). Secondly, the operationalisation of the theory is biased by the challenge of measuring perceived behavioural control directly, as opposed to recording control beliefs (Davies, Foxall & Pallister, 2002; Davies *et al*., 2002; Manstead & Parker, 1995). Thirdly, although there is continuing evidence that other factors add predictive power over and above the measures formally incorporated in the TPB, the theory introduces only one new variable (Davies *et al*., 2002). Ajzen (1991) also supported the addition of predictors as long as they captured a significant proportion of the variance in intention or behaviour. Finally, Sniehotta, Presseau and Araújo-Soares (2014) maintained that the TPB was less predictive of behaviour when studies were based on a longitudinal perspective. They also maintained that experimental tests of the theory have been erratic and the few that have been conducted did not support the theory's assumptions.

Hardeman, Johnston, Johnston, Bonneti, Wareham and Kinmonth (2002) discovered 24 studies that adopted the TPB as an underpinning theory. They concluded that the obtainable evidence was inadequate to draw a robust assumption about the usefulness of the TPB. The aforementioned criticisms of the TPB render this model unsuitable for this study.

2.4   Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980)

The Theory of Reasoned Action often referred to as TRA originated from social psychology, and was propounded by Ajzen and Fishbein in 1980. It was formulated in an attempt to evaluate the differences between behaviour and attitude. It also described the connection between beliefs, attitude, intentions and behaviour.

The theory proposed attitudes, subjective norms and behavioural intentions, as the major constructs of TRA. For a better understanding, it is vital that these fundamental concepts are described. Behavioural intention is the cognitive representation of a person's readiness to perform a given behaviour which is considered to be the immediate antecedent of behaviour (Fishbein & Ajzen, 1975). Attitude is "an individual's positive or negative feelings (evaluative affect) about performing the target behaviour" (Fishbein & Ajzen, 1975:216). Attitude is determined through an evaluation of an individual's beliefs regarding the consequences that arise from behaviour and an assessment of how necessary the consequences are (Fishbein & Ajzen, 1975). Subjective norm reflects an individual's perception of whether people important to the individual think the behaviour should be performed (Ajzen, 1991; Fishbein & Ajzen, 1975:302).

The theory suggests that an individual's behaviour is determined by his/her behavioural intention where the behavioural intention is a function of attitude towards the behaviour and subjective norms surrounding the performance of the behaviour (Ajzen & Fishbein, 1980). The constructs of the TRA such as behaviour is represented in the UTAUT which underpins this study. Figure 2.3 presents Theory of Reasoned Action (TRA).
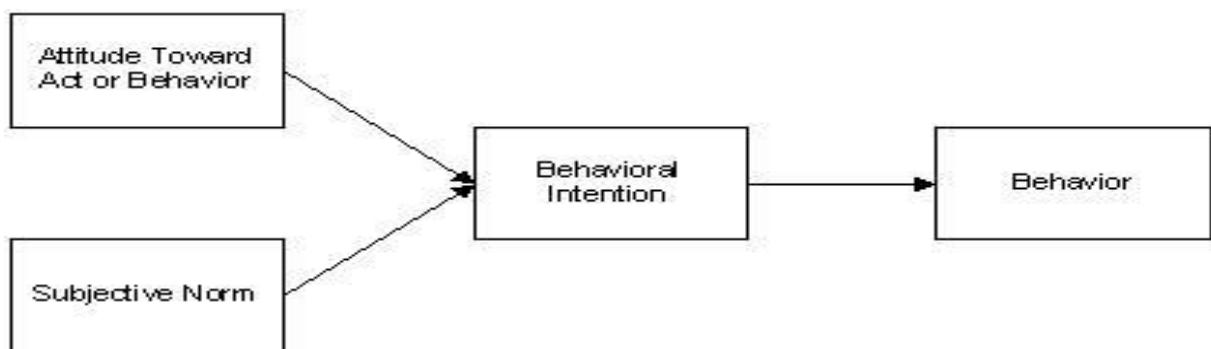
Figure 2.3:   Theory of Reasoned Action (TRA) (Source: Davis *et al*., 1989).

Ajzen and Fishbein (1980) maintained that the TRA is a well-researched intention model that has been recognised to be useful in predicting and explaining behaviour across a wide variety

of disciplines. It is very general and can describe virtually any human behaviour (Tan, Sim, Ooi & Phusavat, 2012).

David, Bagozzi and Warshaw (1989) empirically examined the ability of TRA and TAM to predict the acceptance or rejection of computer-based technology. A longitudinal study was conducted on 107 MBA students to predict the use of a word processing system. They observed that perceived usefulness had a strong influence on peoples' intentions to use technology while perceived ease of use had a little but significant effect on intention. In addition, attitude partly mediated the effect of belief on intention. Subjective norms had no effect on intention. Alqasa, Isa, Othman and Zolait (2014) examined the applicability of TRA in the banking system in Yemen. The study focused on University students and their intention to use banking services. The findings revealed that TRA had a strong predictive power in explaining University students' behavioural intention to utilise banking services. It was also discovered that there were significant relationships between students' attitude, subjective norm and behavioural intention to use banking services. Similarly, Muala, Majali and Ziadat (2012) also used the TRA to underpin a study on the factors that influence an individual's intention to adopt Internet banking service. The survey was administered to 700 Jordanian public University employees that used Internet banking services. Findings revealed that TRA had a strong predictive power in explaining Internet banking services in Jordan. Findings buttressed the theory's proposition that individuals' behavioural intention to use Internet banking service was influenced by their attitude and subjective norm.

Although the TRA has been used to underpin several studies on behavioural intention, it has been criticised for being applicable only to voluntary behaviour, where an individual may choose to perform or not to perform the behaviour at will (Ajzen & Fishbein, 1980; Ajzen & Madden, 1986). In addition, the TRA did not take into consideration situations where a person had no complete or volitional control (Ajzen, 1991), considering the fact most behaviours are not voluntary (Ajzen, 1988). Therefore, the TRA model was found inadequate in explaining behaviours that are not volitional.

2.5   Motivational Model (MM) (Davis, Bagozzi & Warshaw, 1992)

The Motivational Model often referred to as MM was developed by Davis, Bagozzi and Warshaw in 1992 from the field of information systems. MM was developed as a result of the findings of Davis on TAM. Motivation represents the hypothetical construct that describes the internal and external forces that lead to the initiation, direction, intensity and persistence of behaviour (Vallerand, 2004). The constructs of TAM; perceived usefulness and perceived ease of use are embedded in the motivational model. It is focused on explaining user acceptance of information technologies using intrinsic and extrinsic motivations. It proposes that intrinsic and extrinsic motivation affects an individual's intention to use information technology (Luo, Chea & Chen, 2011; Davis, Bagozzi & Warshaw, 1992; Deci, 1975; Lin & Bhattacherjee, 2008; Hwang & Kim, 2007; Teo, Lim & Lai, 1999; Moon & Kim, 2001 and van der Heijden, 2004). Intrinsic motivation is described as participating in an activity/interacting with a system for the purpose of deriving pleasure and satisfaction. On the other hand, extrinsic motivation means participating in an activity or interacting with a system not because of the pleasure derived but for some form of reward/benefit such as improved job performance; increase in pay; or for promotion purposes (Vallerand, 2004; Davis *et al.*, 1992).

The motivational model has been tested widely under various empirical settings and has been found reliable and valid (Luo, Chea & Chen, 2011). Agrifoglio, Black, Metallo and Ferrara (2012) used the MM and TAM to underpin a study on continued Twitter usage. Data was collected from 385 respondents who made use of Twitter. Structural equation modelling was used to analyse data and findings revealed that Twitter users were more extrinsically motivated to continue its use. This is because Twitter use brought about improved performance and helped in achieving desired goals. It was also discovered that perceived ease of use positively affected extrinsic and intrinsic motivation.

Lin and Lu (2011) explored the factors that affect users' intention to join social networking sites (SNS). The motivational theory was used to underpin the study. Four hundred and two online questionnaires were administered to respondents. Analyses of data were by structural equation modelling (SEM). Findings revealed that enjoyment was a major factor that enhanced the continual use of SNS. The outcome of this study also showed that the MM was capable of explaining users' continued intention to use SNS.

Similarly, Kim, Shim and Ahn (2011) adopted intrinsic-extrinsic motivation to describe factors that motivate the use of social networking services (SNS) in Korea. SNS users from diverse age groups were involved in the study. A mixed method approach was used for data collection. Confirmatory factor analysis, the correlation matrix of the constructs and partial least squares (PLS) structural analysis were used in the study. The findings from the study presented some important insights for SNS managers as ways to increase users' motivation, particularly in terms of participation and loyalty.

In addition, Igbaria, Parasuraman, and Baroudi (1996) tested the motivational model on the use of microcomputers by professionals and managers in North America. Data was collected from 471 respondents in 62 different companies. Findings of the study revealed that perceived usefulness, perceived enjoyment and social pressure are key factors that encourage the use of microcomputers. Findings also revealed that possession of skills by managers and professionals would enhance microcomputer use in any organisation.

Liao, To, and Liu (2013) also empirically validated the motivational model by exploring the factors that motivate blog users to partake in blog activities in Taiwan. Two hundred and twenty-five (225) questionnaires were used for data collection from blog users. Data analyses were by the application of structural equation modelling. Findings revealed that factors that determined users' intention to use blogs included; utilitarian motivation (perceived usefulness), hedonic motivation (perceived playfulness), social identity (blog identification) and habit. It was also observed that in the blog context, habit, perceived playfulness and blog identification had more significant effects on users' intention than perceived usefulness. Findings from the study confirmed that users engage in blogging because it is pleasurable.

Furthermore, in a study on factors that motivate users to partake in virtual worlds (VW), Verhagen, Feldberg, Van den Hooff, Meents and Merikivi (2012) adopted the motivational model. Extrinsic and intrinsic motivations were integrated as behavioural determinants. Economic value, ease of use, escapism and visual attractiveness were also added as motivational drivers. Hypotheses were tested on 846 users of virtual world and data was analysed using structural equation modelling. Findings of the study emphasised the importance of taking both extrinsic and intrinsic motivation into consideration when predicting and elucidating VW usage. Findings also supported the MM as a valuable tool for determining the adoption of new technologies.

Venkatesh, Brown, Maruping, and Bala (2008) and Vallerand (2001) stated that the motivational model was complicated and depended on many influences. They described the model as a difficult one which could not offer a simple predictive application in organisational practice. They criticised the model for being too individualistic and constricted. The limitations of the motivational model were addressed by the UTAUT model underpinning this study. The constructs of the motivational model also relate to the variables in UTAUT. Intrinsic motivators relate to effort expectancy, while extrinsic motivators relate to performance expectancy, social influence, and facilitating conditions. Figure 2.4 illustrates the Motivational Model (MM).
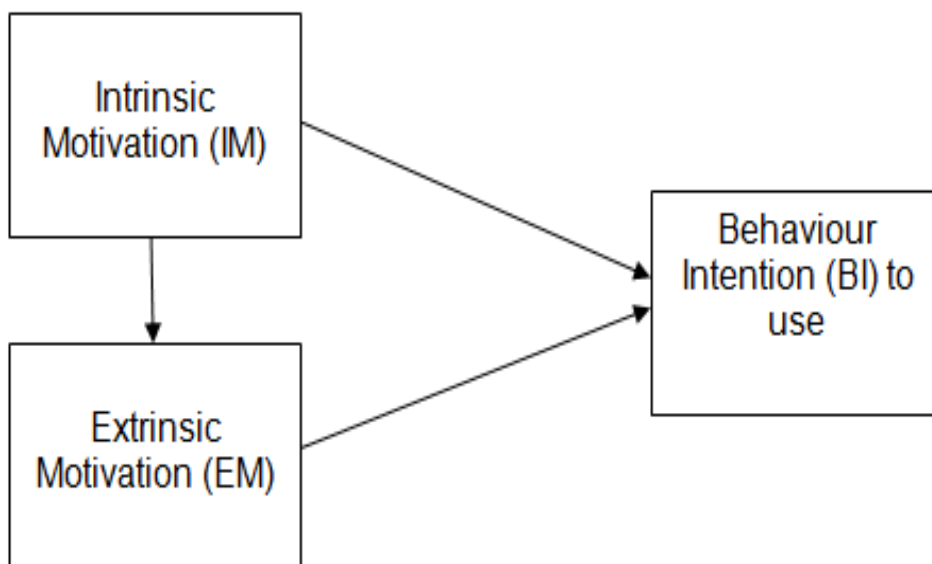
Figure 2.4: The Motivational Model (MM) (Source: Cocosila, Archer & Yuan, 2009:344)

2.6   Diffusion of Innovation Theory (DOI) (Rogers, 1962)

Everett Rogers diffusion of innovation theory is a theoretical framework that has been extensively used in technology diffusion and adoption (Dooley, 1999). It defines how an innovation is communicated through various channels at a particular time among members of a social system (Rogers, 2003). Diffusion is defined as "the process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003:5). He further defines adoption as a decision of "full use of an innovation as the

best course of action available" and rejection as a decision "not to adopt an innovation" (Rogers, 2003:177). DOI proposes that "many different outcomes are of interest in technology adoption, including the initial decision to use the system and the continued or sustained use of the innovation" (Agarwal & Prasad, 1997:558).

Rogers (2003) maintained that in adopting an innovation, an individual goes through five stages: knowledge, persuasion, decision, implementation and confirmation. He further stated that the constructs of diffusion of innovation theory include innovation, communication channels, time, and social system. Innovation is described as "an idea, practice, or project that is perceived as new by an individual or other unit of adoption" (Rogers, 2003:12).

Rogers (2003) defined communication as "a process in which participants create and share information with one another in order to reach a mutual understanding" (Rogers, 2003:5). Channel, on the other hand, is the means by which a message gets from the source to the receiver" (Rogers, 2003:204). The social system is "a set of interrelated units engaged in joint problem-solving to accomplish a common goal" (Rogers, 2003:23). The features that determine the adoption of an innovation are:

• Relative Advantage- It is defined as "the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 2003:229).

• Compatibility is "the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters" (Rogers, 2003:15). Incompatibility of an innovation with an individual's need will adversely affect its adoption, while compatibility of an innovation with an individual's need will enhance its adoption and reduce uncertainty (McKenzie, 2001; Sahin, 2006).

• Complexity is "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 2003:15). The extreme complexity of an innovation will discourage its adoption, while ease of use will encourage its adoption.

• Trialability is "the degree to which an innovation may be experimented with on a limited basis" (Rogers, 2003:16).

•   Observability is defined as "the degree to which the results of an innovation are visible to others" (Rogers, 2003:16). Summarly, individuals will adopt innovations having a more relative advantage, compatibility, simplicity, trialability, and observability faster than other innovations.

Several studies have adopted the DOI theory to underpin research. Ntemana and Olatokun (2012) investigated the influence of relative advantage, complexity, compatibility, trialability, and observability on lecturers' use of information and communication technologies at the National University of Lesotho (NUL). A structured questionnaire was used to collect data from 213 lecturers. Stepwise multiple regression was used for data analysis. Findings showed that relative advantage, complexity and observability had a positive effect on lecturers' attitude towards using ICTs.

Similarly, in a study that focused on Millennials and their adoption of new technology in libraries, Blackburn (2011) used the DOI theory. The features that determine the adoption of an innovation mentioned earlier were examined. Findings revealed that technology had become a panacea to virtually every problem in the library. In addition, Millennials had become change agents in the library especially because of their positive attitude towards new technologies. Likewise, Oladokun and Igbinedium (2009) applied the DOI as a theoretical framework for a study on the adoption of automatic teller machines (ATM) in Plateau state, Nigeria. The attributes of DOI theory were tested on bank customers who utilised ATM. Fourteen (14) banks were selected for the study and structured questionnaires were used to elicit responses from 428 respondents. Multiple regression and principal factor analysis were used to analyse data. Findings indicated that relative advantage, compatibility, complexity and trialability had a significant impact on attitude towards ATM and intention to use it. It was recommended that banks should ensure that ATMs were easy to use and able to meet the needs of customers. The authors recommended that the management of NUL should ensure that relevant training was organised as well as deploying user-friendly ICTs. They concluded that the DOI theory was still an esteemed framework for research on ICT diffusion.

Despite the successes that had been recorded on the use of DOI in explaining the innovation diffusion process, it was criticised for being too individualistic and did not take account of the influence of organisational and environmental factors (Lee & Cheung, 2004; Brancheau &

Wetherbe, 1990; Fichman & Carroll, 1999). Dwivedi, Kapoor, Williams and Williams (2013) also criticised the DOI for being unsuitable for examining aspects of post-adoption behaviour.

2.7   Social Cognitive Theory (SCT) (Albert Bandura, 1986)

Social Cognitive Theory often referred to as SCT is a psychological model of behaviour that was developed by Albert Bandura. It was formerly referred to as the social learning theory in the 1960s. It developed into social cognitive theory in 1986. Bandura (1986) was of the opinion that many researchers overlooked a vital aspect of learning which involved observation of the activities of other individuals. He maintained that "of the many cues that influence behaviour, at any point in time, none is more common than the actions of others" (Bandura, 1986:206). This assertion gave rise to the development of the social cognitive theory. In the social cognitive view, people are neither driven by internal forces nor spontaneously shaped and controlled by external motivations. Rather, human functioning is explained in terms of a model of triadic reciprocity in which behaviour, cognitive and other personal factors and environmental events all operate as interacting determinants of each other (Bandura, 1986).

SCT suggests that learning takes place in a social environment and people acquire skills, strategies, beliefs, knowledge and attitudes by observing others (Bandura, 1996). According to the SCT, observing others performing a behaviour such as making use of a computer system influences the spectators' perceptions of his/her ability to perform the behaviour or self-efficacy, and the expected outcomes. Figure 2.5 presents the Social Cognitive Theory.
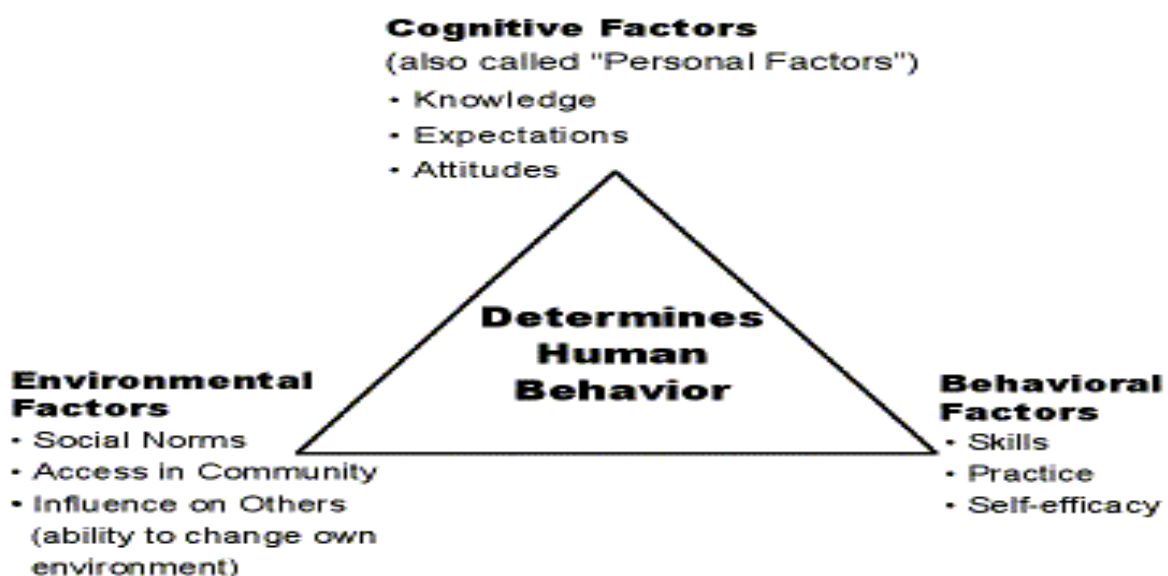
Figure 2.5: Social Cognitive Theory (Source: Bandura, 1986).

Self-efficacy is an important construct in the SCT (Compeau, Higgins & Huff, 1999). Self-efficacy is defined as "People's judgments of their capabilities to organise and execute courses of action required to attain designated types of performance" (Bandura, 1986:391). It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses. Self-efficacy reveals a person's beliefs about his/her skills in using information technologies (Compeau, Higgins Huff, 1999). People with high self-efficacy are likely to view difficult tasks as something to be mastered rather than something to be avoided (Bandura, 1986; and Hasan, 2006). Similarly, Compeau and Higgins (1995) in a study on the application of SCT to training for computer skills maintained that self-efficacy has a significant influence on the use of computers and those who see themselves as having the capability to use computers end up performing well than those who doubt their abilities.

SCT has been applied by scholars in various areas most especially in learning, motivation in classroom and achievements. For instance, Compeau and Higgins (1995a) in a survey of managers and professionals in Canada assessed the impacts and antecedents of computer self-efficacy. They discovered that computer self-efficacy had a major impact on the user's expectations and outcome of using computers, affect, anxiety (emotions) and actual computer use. They found that a person's self-efficacy and outcome expectation were positively influenced by the use of computers by other individuals around him/her. Self-efficacy was found to be a vital trait that influenced an individual's decision to use or reject computers.

Compeau, Higgins and Huff (1999) adopted the SCT in investigating the influence of computer self-efficacy, affect, anxiety and outcome expectancy on computer usage. A longitudinal study was carried out and data was gathered from 394 respondents over a one-year interval. Findings revealed that significant relationships existed between computer self-efficacy and outcome expectations and between self-efficacy, affect, anxiety and use. It was also discovered that performance outcomes influenced affect and use, while affect was significantly related to use. Overall, the findings revealed that self-efficacy and outcome expectations influenced an individual's affective and behavioural intentions to utilise information technology.

Despite the use of SCT to underpin several studies, it has been criticised by some scholars. Dombeck (2008) stated that SCT placed too much emphasis on environmental determinants, too little attention on developmental changes and perceived the model as being too mechanical

with trivial consideration of the spontaneity and creativity of humans. The SCT will not be used in this study because of this criticism, but user behaviour which is a construct of SCT is connected to the present study's variables and has been reflected in the UTAUT which is used to underpin the present study.

2.8   Model of Personal Computer Utilization (MPCU) (Thompson, Higgins & Howell, 1991)

The MPCU suggests that "the utilisation of a PC by a knowledge worker in an optional use environment would be influenced by the individual's feelings (affect) toward using PCs; social norms in the workplace concerning PC use; habits associated with computer usage; the individual's expected consequences of using a PC; and facilitating conditions in the environment conducive to PC use" (Thompson *et al*., 1991:126) The major constructs in MPCU include:

 • Job-fit: "the extent to which an individual believes that using [a technology] can enhance the performance of his or her job" (Thompson *et al*., 1991:129).

• Complexity: "the degree to which an innovation is perceived as relatively difficult to understand and use" (Thompson *et al*., 1991:128).

• Long-term consequences: "Outcomes that have a pay-off in the future" (Thompson *et al*., 1991:129).

• Affect Towards Use: "Feelings of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act" (Thompson *et al*., 1991:127).

• Social Factors: "Individual's internalisation of the reference group's subjective culture and specific interpersonal agreements that the individual has made with others, in specific social situations" (Thompson *et al*., 1991:126).

• Facilitating Conditions: "Provision of support for users of PCs may be one type of facilitating condition that can influence system utilisation" (Thompson *et al*., 1991:129).

Thompson, Higgins and Howell (1991) refined Triadis (1980) framework of attitudes and behaviour to predict personal computer (PC) utilisation among knowledge workers. Data was gathered from two hundred and twelve (212) respondents and was analysed using partial least

squares (PLS). Findings indicated that social norms, the complexity of use, fit between the job, PC capabilities, and long-term consequences greatly influenced PC utilisation.

In addition, Thompson, Higgins and Howell in 1994 examined the effect of prior experience on personal computer utilisation through an extension of the model they developed and tested in 1991. Direct influence, indirect influence and competing ways of modelling the influence of experience were tested. Data was gathered from 325 knowledge workers spread across eight organisations. Partial least squares were used to analyse data. Findings revealed that experience had a direct influence on utilisation. Although indirect effects were present, they were not significant. The researchers were able to remedy the limitations encountered in their previous study in this study.

Other scholars have examined the MPCU model and adapted it to suit their studies. Negash (2012) adopted the MPCU in a study on the perception of African youth on personal computer utilisation in Ethiopia and Rwanda. Data was gathered from 228 youths. The constructs of MPCU, complexity, facilitating conditions and long-term consequences were described. Findings revealed that availability of training programs and access to personal computers (PC) were key factors that enhanced increased use of PCs. The author also discovered that age and gender factors determined the usage or rejection of PCs. Respondents who were less than fifteen (15) disagreed about PC utilisation factors. Alatawi, Dwevedi, Williams and Rana (2012) in their study indicated that facilitating conditions and habit were vital in predicting good behaviour. However, they criticised the MPCU that it was only useful in explaining computer usage in a voluntary environment.

2.9   A Combination of Technology Acceptance Model (TAM) and TPB Model (C-TAM & TPB) (Taylor & Todd, 1995)

The C-TAM & TPB theory was developed by Taylor and Todd in 1995 because of their belief that the TAM did not include social and control factors in its variables. These factors have been confirmed by many studies to have an outstanding capability to influence the actual use of new technologies. Taylor and Todd (1995) merged the predictors of TPB (subjective norm and perceived behavioural control) with the constructs of TAM to make up the C-TPB-TAM.

Chen (2013) explored the network behaviours of Web 2.0 users using the TPB, TAM and C-TAM-TPB model. Questionnaires were administered to 638 network users and the relationships between variables were examined using the structural equation models (SEM).

The outcome of the research showed that the explanatory power of planned behaviours is more satisfactory than the technology acceptance model and C-TAM-TPB. This is because TPB emphasises behaviours (Timothy & Sulaiman, 2008), while TAM and C-TAM-TPB give prominence to the extent of acceptance of new technology (Fetscherin & Lattemann, 2008; Taylor & Todd, 1995).

Similarly, Hsiao and Tang (2014) examined college students' behavioural intention to embrace e-textbooks. The combined model of TAM and TPB (C-TAM-TPB) and four other models were empirically assessed to underpin the study. The survey method and structural equation modelling (SEM) were adopted to examine and compare these five models. The outcome of the study indicated that a combination of TPB and TAM provided less effective but adequate predictive behavioural power.

Likewise, Safeena, Date, Hundewale and Kammani (2013) carried out a study on the factors that determine the acceptance and use of Internet banking by consumers. The influence of perceived ease of use, perceived usefulness, perceived behavioural control, attitude, and subjective norm on the use of Internet banking among consumers was investigated using an integration of TAM and TPB. Data was gathered through the use of questionnaires. Five hundred and forty-nine (549) questionnaires were distributed randomly among bank customers. Findings of the study revealed that the aforementioned constructs were significant determinants of online banking implementation.

In addition, Tseng, Tu, Lee and Wang (2013) in a study on the usage of satellite navigation fleet management systems by drivers in Taiwan, tested the C-TAM-TPB model. Two hundred and sixty-six (266) questionnaires were administered to explore the correlations between constructs. Structural equation modelling was used for data analyses. Findings revealed that perceived ease of use, attitude, perceived behavioural control, usefulness and subjective norm had a significant effect on behavioural intentions to use new technology.

Furthermore, Sentosa and Mat (2012) examined the factors that determine Internet purchasing among University students. The TPB and TAM were combined to investigate the relationships between attitude, subjective norm, perceived behaviour control, perceived usefulness and perceived ease of use toward intention and Internet purchasing behaviour. Questionnaires were used for data collection and 304 students were involved in the study. The researchers discovered that the reviewed model (C-TPB-TAM) was the most suitable model to describe

Internet purchasing behaviour compared to using TPB and TAM independently. This was also corroborated by (Jen, Lu & Liu, 2009; Taylor & Todd, 1995) who opined that C-TPB-TAM possesses a high capability in describing users' intention to use new technologies. However, Yayla and Hu (2007) criticised the C-TPB and TAM. They opined that using TAM and TPB separately offers theoretical parsimony, clarity and better suite empirical data than using the combined TAM-TPB models. Although some of the constructs in C-TPB and TAM are adopted for this study, (C-TAM-TPB) is not suitable to investigate the extent of adoption of automation in public libraries. Figure 2.6 presents the Combined TAM and TPB (C-TAM-TPB).
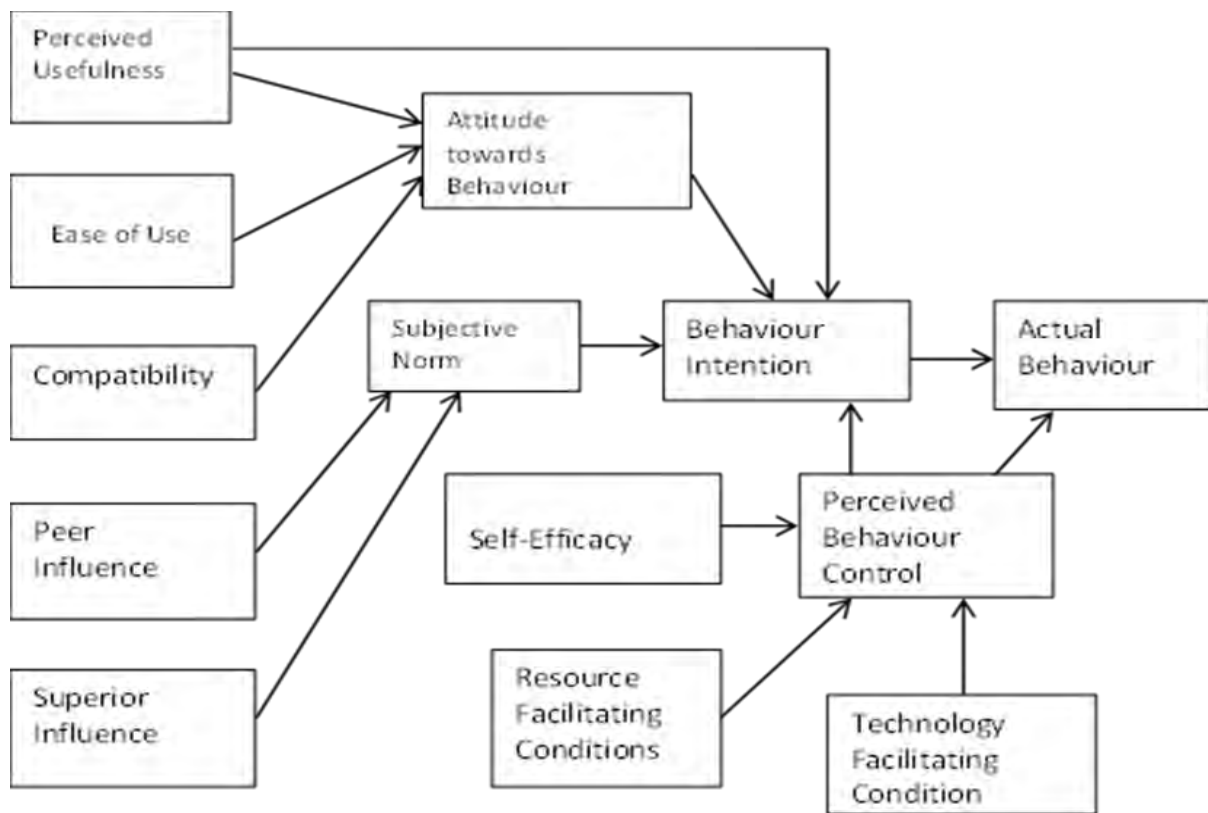
Figure 2.6: Combined TAM and TPB (C-TAM-TPB) (Source: Taylor & Todd, 1995)

2.10 The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis & Davis, 2003)

The Unified Theory of Acceptance and Use of Technology is the most recent technology acceptance model. It has been a useful instrument for researchers who face difficulties with making a perfect choice of an appropriate model in the midst of several models (Venkatesh, Morris, Davis & Davis, 2003).

Venkatesh, Morris, Davis and Davis (2003) in a review and empirical comparison of the previous models: TAM, TPB, TRA, IDT, MM, SCT, MPCU and CTAM- &TPB, identified five major limitations of these models:

1. The technologies studied in prior models were relatively simple; individual oriented compared to more complex and sophisticated organisational technologies.

2. The participants in most of the comparison studies carried out on prior models were students only and most of the researches were carried out in a non-academic setting.

3. Individual reactions to prior studies were retrospective. Most of the tests were conducted after participants had accepted or rejected technologies rather than during active decision making by participants.

4. The nature of measurement in prior models was cross-sectional.

5. Most of the tests conducted were on the basis of voluntary usage, therefore, making it difficult to generalise results in tests conducted in a mandatory setting.

In an attempt to address these weaknesses/limitations, Venkatesh *et al*. (2003) conducted a longitudinal field study among individuals who were being introduced to new technologies in four organisations. They sampled for heterogeneity across technologies, organisations, industries, business functions and nature of use (putting into consideration voluntary and mandatory use). After careful review of the previous models, they discovered that seven constructs appeared to be significant direct determinants of intention or usage, in one or more of the individual models. They theorised that out of these seven, four will play a significant role in influencing behavioural intention to use information communication technology. They include performance expectancy, effort expectancy, social influence and facilitating conditions.

• Performance Expectancy: "Is the degree to which an individual believes that using a system will enhance performance on a job (Venkatesh *et al*., 2003:447). This construct has its origin from perceived usefulness in TAM and C- TAM-TPB, extrinsic motivation in MM, relative advantage in DOI and outcome expectations in SCT.

• Effort Expectancy: "Is the degree of ease associated with the use of the system" (Venkatesh *et al*., 2003:450). This construct originated from perceived ease of use in TAM/TAM2, complexity in MPCU and ease of use in DOI.

• Social Influence: The individual's perception that a person who is important to him/her thinks s/he should use the system (Venkatesh *et al*., 2003:451). This construct originated from the subjective norm in TRA, TAM2, TPB, and C-TAM-TPB, social factors in MPCU, and image in DOI.

• Facilitating Conditions: It refers to the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system (Venkatesh *et al*., 2003:453). This construct originated from three different theories: perceived behavioural control in TPB and C-TAM-TPB, facilitating conditions in MPCU, and compatibility in DOI.

• Behavioural intention is a person's subjective probability that he or she will perform the behaviour in question (Venkatesh *et al*., 2003:288).

The constructs discussed above are moderated by gender, age, experience, and voluntariness of use. The moderating variables are defined below.

• Age: the degree to which the age of an individual affects their use of a new system;

• Gender: the extent to which being a female or male makes it easy to utilise a new system;

• Experience: the degree of use over time with gaining experience in the use of a system; and

• Voluntariness: the degree to which the system is used voluntarily.

Figure 2.7 presents the UTAUT model.
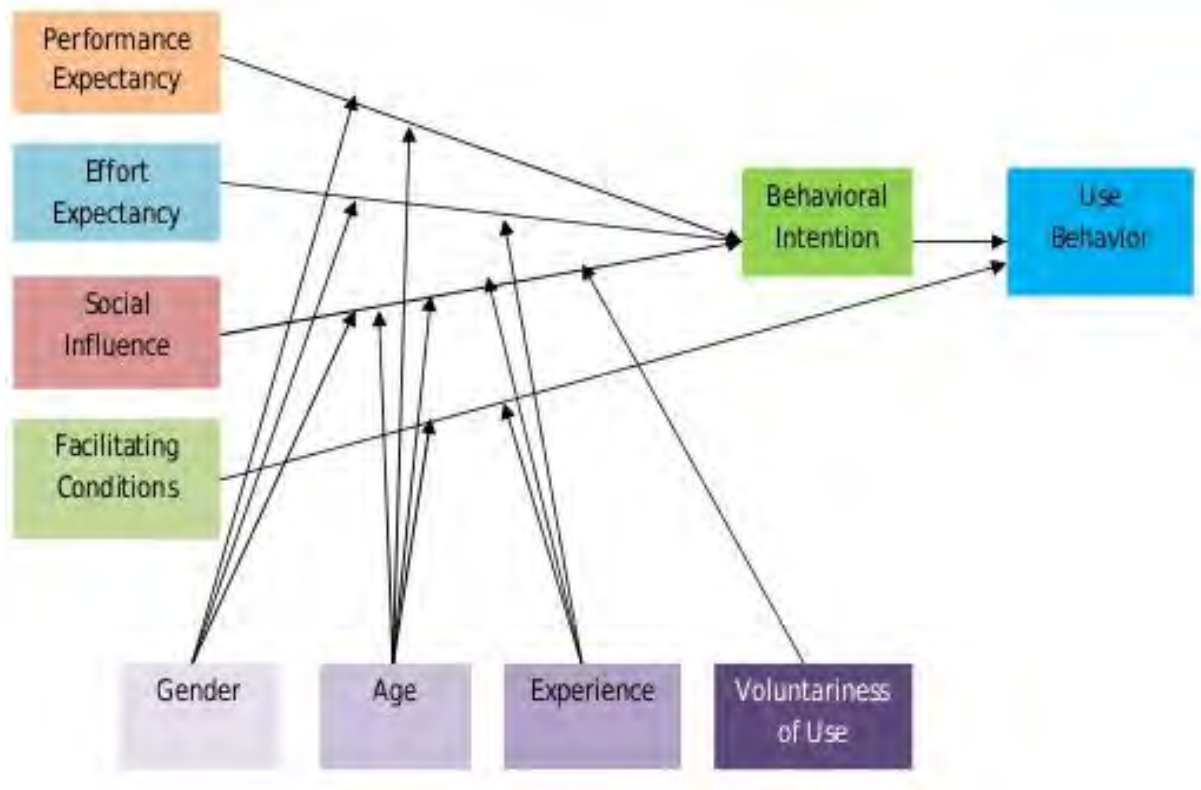
Figure 2.7: UTAUT Model (Source: Venkatesh *et al.*, 2003)

Since its inception, many empirical studies have used UTAUT to explain user adoption of a variety of information technologies. It has been validated and tested in different contexts and different domains. Tibenderana, Ogao, Ikoja-Odongo and Wokadala (2010) applied UTAUT in measuring levels of end-users' acceptance and use of hybrid library services in University libraries in Uganda. They observed that 'relevance' and 'social influence' had significant effects on intentions to use e-library services.

Gupta, Dasgupta and Gupta (2008) in a study on the adoption of ICT in a government organisation in a developing country examined adoption behaviour by using the UTAUT model. They discovered that performance expectancy, effort expectancy, social influence and facilitating conditions all positively influenced the use of ICT. They did not find any significant moderating effect of gender on these relationships.

Similarly, Al Awadhi and Morris (2008) investigated the adoption of e-government services using UTAUT model and discovered that performance expectancy, effort expectancy and peer influence determined students' behavioural intention. Moreover, facilitating conditions and behavioural intentions determined students' use of e-government services.

Likewise, Nassuora (2012) examined the major factors that affect the use of mobile learning (m-learning) among students in Saudi Arabia and used the UTAUT model as an underpinning theory. The researcher used a quantitative approach and questionnaires were administered to 80 students. The results revealed that acceptance level of mobile learning by students was very high. Effort expectancy and facilitating conditions had significant roles to play in students' acceptance and use of m-learning. In addition, the results showed that a positive attitude led to the behavioural intention to use mobile learning. He recommended that for continuity and consistency, the University management should concentrate on designing mobile learning systems that suit the needs of the students, and also make favourable policies that would guide its use.

In addition, Tibenderana and Ogao (2008) in a study on end-users' acceptance and use of e-library services in University communities in a less developed country in Uganda, validated and expanded the UTAUT model. They added relevance and awareness to its constructs. Furthermore, in an investigation into the understanding of students' perceptions about using an open source web-based Virtual Learning Environment (Moodle), Sumak, Polancic and Hericko (2010) adopted the UTAUT model in an online survey of 235 undergraduates. They discovered that social influence and performance expectancy had significant effects on students' attitudes. Similarly, social influence and attitudes toward using Moodle were major determinants of students' behavioural intention. In addition, students' behavioural intentions were shown to be strong and an important determinant of actual use of Moodle. Likewise, Hsiao-Hui (2012) carried out an empirical study on the acceptance and use of Moodle in Taipei, Taiwan. He employed the UTAUT model in this study. Data was collected from 47 students. In their findings, they observed that performance expectancy, effort expectancy and social influence determined whether the students would utilise Moodle or not. They went further to say that behavioural intention acted as a mediator to urge students' use of Moodle. However, they noted that facilitating conditions was not a significant predictor of technology acceptance in an advanced information infrastructure community like Taiwan.

Zhou, Lu and Wang (2010) in explaining user adoption of mobile banking integrated UTAUT and TTF (task-technology fit) model and found that performance expectancy, task-technology fit, social influence, and facilitating conditions have significant effects on user adoption. Similarly, they discovered a significant effect of task-technology fit on performance expectancy.

As a theoretical basis to conduct empirical research, Akbar (2013) employed UTAUT in testing the factors that influence students' acceptance and use of technology in Carnegie Mellon University, Pittsburgh, Pennsylvania, in the United States of America. He observed that performance expectancy, effort expectancy, facilitating conditions and attitude towards using technology were significant constructs in determining use and acceptance of technology. Age, gender and voluntariness of use which are moderating variables had a moderating influence while experience was not significant.

Kaba and Toure (2014) in another study applied the UTAUT model in understanding behavioural intention to use social networking site by young people in the least developing country. Data was gathered through a questionnaire from 1,039 respondents who used social networking websites in Africa. The results revealed that performance expectancy had a positive effect on behavioural intention but the interaction of performance expectancy, gender, and age was insignificant. In addition, the effects of effort expectancy and its moderators on behavioural intention were not significant. The results revealed that majority of the respondents had embraced the Internet and were using it consistently.

Several studies have extended the UTAUT by introducing additional variables so as to suit their studies. Wang, Wu and Wang (2009) in investigating the determinants of mobile learning acceptance and to discover if there exists either age or gender differences in the acceptance of m-learning, used the UTAUT incorporating perceived playfulness and self-management of learning, to account for mobile learning acceptance. Data was gathered from 330 respondents in Taiwan. Analysis revealed that performance expectancy, effort expectancy, social influence, perceived playfulness, and self-management of learning were all significant determinants of behavioural intention to use mobile learning. They also observed that age differences moderated the effects of effort expectancy, social influence on mobile learning use intention and that gender differences moderated the effects of social influence and self-management of learning on mobile learning use intention.

Similarly, Martinsa, Tiago and Popovic (2014) in providing more predictive power to existing UTAUT, combined perceived risk with the constructs of UTAUT to understand the determinants of Internet banking adoption. The research data was gathered with the use of a questionnaire from 249 respondents in Portugal. They discovered that performance expectancy, effort expectancy, social influence, and perceived risk were the most important factors in

explaining users' intentions to use Internet banking. However, facilitating condition was found to be insignificant in explaining Internet banking adoption.

Likewise, due to insufficient research in e-commerce on developing countries like Nigeria and limited understanding of the fundamental factors that affect its adoption, Chiemeke and Evwiekpaefe (2011) proposed a conceptual framework of a modified UTAUT model to study Internet utilisation in Nigeria. They modified the UTAUT by adding some Nigerian factors that determine user adoption of e-commerce. These included; culture, cost, awareness, power supply, government regulation, reliability, accessibility and trust/security.

Wang and Wang (2010), in their study to determine gender differences in mobile Internet acceptance in Taiwan extended the UTAUT by adding perceived playfulness, perceived value and palm-sized computer self-efficacy. Behavioural intention was chosen as a dependent variable. Use behaviour, facilitating conditions, experience, voluntariness and age were deleted in their study. Data was collected from 343 respondents and their findings revealed that perceived value had a significant influence on adoption intention and palm-sized computer self-efficacy played an important role in predicting mobile Internet acceptance. However, perceived playfulness did not have a solid influence on behavioural intention. This may be due to service or network communication quality issues during the study.

Furthermore, BenMessaoud, Kharrazi and MacDorman (2011) modified the UTAUT model by adding attitude toward using technology and leadership to its constructs, in an attempt to have a better grasp of the motivation behind surgeons' decision to reject or adopt robotic-assisted surgical techniques. Semi-structured interviews were conducted on 21 surgeons comprising two groups: users and nonusers. BenMessaoud, Kharrazi and MacDorman (2011) observed that the major facilitators to adoption were perceived usefulness and facilitating conditions among both users and nonusers; followed by the attitude toward using technology among users and extrinsic motivation among non-users. The study's findings can assist surgeons, hospital and medical school administrators and other policy makers on the appropriate adoption of robotic-assisted surgery and serve as a guide for future research.

Venkatesh, Thong and Xu (2012) extended the UTAUT in a study of the acceptance and use of technology in a consumer context. Apart from the four major constructs of UTAUT: performance expectancy, effort expectancy, social influence and facilitation conditions; the researchers integrated hedonic motivation, price value, and habit to extend the applicability of

UTAUT to the consumer context. They referred to this as UTAUT2. The purpose of this extension was to expand the theoretical horizons of UTAUT. However, voluntariness was dropped as a moderating variable. A two-stage online survey of 1,512 mobile Internet users was used in the study. The research confirmed the significant roles of hedonic motivation, price value, and habit in influencing technology use in UTAUT2, which was tailored to the context of consumer acceptance and use of technology.

Although the UTAUT model is very robust and has been used by various researchers in different contexts, it was criticised by Lin and Bhattacherjee (2008) for not capturing fully, the influence of external factors that potentially inhibit or enable performance of behaviour. Similarly, Brown, Dennis and Venkatesh (2010) observed that the UTAUT model suffers from the limitation of being predictive but not particularly suitable for providing explanations that can be used to design interventions that foster adoption.

Similarly, Bagozzi (2007) also criticised the UTAUT. He stated that despite having a well-meaning and thoughtful presentation, it had reached a stage of chaos because it has 41 independent variables for predicting intentions and at least 8 independent variables for predicting behaviour. He proposed instead a unified theory that coheres the "many splinters of knowledge" to explain decision making. Likewise, Van Raaij and Schepers (2008) criticised the UTAUT as being less parsimonious than the previous Technology Acceptance Model and TAM2. They also referred to the grouping and tagging of items and constructs as being problematic because a variety of unrelated items was combined to reflect a single psychometric construct.

Despite the several criticisms, the UTAUT model has been empirically examined and found to outperform the eight individual models outlined above (Taiwo & Downe, 2013; Akbar, 2013; Oliveira, Faria, Thomas & Popovi, 2014). It is also believed to be more robust and the best model in terms of the metrics of parsimonious fit and explanatory power than any other technology acceptance model in evaluating and predicting acceptance and use of technology (Hsiao & Tang, 2014; Venkatesh *et al.*, 2003). In addition, the validation of UTAUT in the originating research (Venkatesh *et al.*, 2003) showed that UTAUT explains 70% of the variation in usage intention (acceptance) of technology which is greater than each of the eight previous models and their extensions (Akbar, 2013). It is also 70% accurate at predicting acceptance and use of new ICT innovations (Taiwo & Downe, 2013; Moran, Hawkes & Gayar, 2010). Furthermore, UTAUT serves as a valuable tool for administrators who need to assess

the possibility of success for the adoption, acceptance and use of new technologies (Venkatesh *et al*., 2013). These major strengths of UTAUT justify its choice as the underpinning theoretical framework for this study.

2.11   Summary

The purpose of this chapter was to examine the models of technology adoption and use comprehensively. Nine models were reviewed in all and the UTAUT which underpins this study was chosen. Constructs/variables of the models that make up UTAUT were described. These constructs mostly informed the literature review in the next chapter.

LITERATURE REVIEW

3.1   Introduction

Literature review refers to a broad overview of previous research on a particular subject. The overview reveals what is known about the subject and what is yet to be known. This sets up the justification for an enquiry into the subject (Denney & Tewksbury, 2013). It is "a library or desk-based method involving the secondary analysis of explicit knowledge, so abstract concepts of explicit and tacit knowledge are explored" (Jesson, Matheson & Lacey, 2011:9). The purpose of a literature review is to locate the research project, to form its context/background and provide insights into previous works of scholars (Blaxter, Hughes & Tight, 2010).

Literature review serves various purposes and comprises a wide range of activities. It is an important aspect of research because it enables the researcher to clearly state contradictions and gaps in existing knowledge, why the study is vital, why it is different from previous research and how the study adds to knowledge. Aveyard (2014) states that the following are reasons for doing a literature review:

• It provides a summary of literature that is available on a particular subject since it is practically impossible for an individual to assimilate, process and decide on how to implement all the available information in a discipline.

• It gives room for analysis of many papers which leads to the development of new insights.

In addition, literature review helps a researcher in formulating research questions and aids proper identification of appropriate theories and related research studies. It also assists in the analysis and interpretation of data generated from the study (Ridley, 2012).

The purpose of this study was to investigate the level of automation of public libraries in South West Nigeria. The study addressed two major objectives. They are: to examine the extent of implementation of ICTs in public libraries in South West Nigeria and to investigate the factors influencing acceptance and use of ICTs in public libraries in South West Nigeria. Four research questions were addressed: 1) What is the level of public library automation in South West Nigeria? 2. What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria? 3) What are the skills and competencies that librarians and patrons

possess in the use of various ICTs? 4) What challenges do librarians and patrons experience in the use of automated library systems?

This chapter is organised according to themes of the research questions, broader issues around the research phenomenon and theoretical framework that underpins the study. Topics covered include; global status of library automation; status of library automation in Sub-Saharan Africa; automation of public libraries in South West Nigeria; implementation of integrated library systems; factors influencing automation of public libraries in Nigeria based on UTAUT model (performance expectancy, effort expectancy, social influence and facilitating conditions); skills needs of librarians and patrons in automated library environments and challenges in automated library environments.

3.2   Global status of library automation

The spread of ICTs has affected and will continue to affect the roles and day to day activities of public libraries for years to come (Eze, 2012). For instance, in the United Kingdom, library automation has had a significant effect on public libraries with regard to lifelong learning, social inclusion and electronic networking (Spacey, Goulding & Murray, 2003). Clark (2010) in a study on the need for public libraries in a digital age noted that public libraries in the U.K play a major role in providing access to information through the Internet and providing free Internet services to members of a community. He stressed that free Internet services bridge the digital divide between the haves and have-not and between the information-rich and the information-poor. In addition, public libraries in the UK have helped to solve literacy problems. He ruled out the common belief that problems connected to access to information are automatically solved once everyone has broadband. He emphasised the role of public libraries in helping users who cannot do a proper search on the Internet to get reliable information.

Jay and Weber (2005) investigated the impact of the Internet on the delivery of reference services in English public libraries. They established that ICTs were used for various purposes to satisfy the diverse needs of users such as providing reference services. Results revealed that the public libraries were highly useful in providing access to electronic reference sources within the library than they could remotely. Findings also showed that all respondents were found to have used e-mail services in responding to reference enquiries at one point or the other.

The history of library automation in Finland dates back to the 1970's. It was recorded that research libraries were the pioneers of library automation (Lounasvuori & Vattulainen (N.D).

Public libraries were the next in line and by mid-1970s, a conglomerate of the libraries in the metropolitan area was automated. The 1980s recorded a wide spread of automation activities. About 84% of public libraries had been automated and these libraries adopted a variety of local automated systems which were not well-suited with common standards but as the years progressed, the 1990s recorded the acquisition of library software that was compatible with the required standards (Lounasvuori & Vattulainen (N.D).

Like in the United Kingdom, the use of automated systems are also prevalent in US public libraries. Becker *et al*. (2010) examined how the American public benefitted from Internet access at public libraries. They established that public libraries were the main component of America's digital infrastructure and the swift adoption of computing technologies by all segments of present society had made them an essential part of everyday work and life. They observed that majority of the residents in the US made use of public library services to meet diverse needs. The public libraries played a significant role in offering technological support to those who were in need, especially those who did not have access to personal computers and Internet. In times of disaster, public libraries serve as an access point and provide a delivery point for the government to those who might have been displaced (Becker *et al*., 2010).

Becker *et al*. (2010) found that 44 percent of the public in homes living below the federal poverty line made use of public library computers and Internet access in the US. Findings from the survey revealed that computers and Internet access in public libraries fulfilled numerous purposes. These include; educational purposes, satisfying health information needs, finding new job openings and career opportunities, completing online applications, participating in aptitude tests, applying for bursaries and grants, leisure activities such as watching videos, listening to music, engaging in chats, maintaining blogs and personal websites, ordering products and making online payments. Presently, in the United States, virtually all public libraries provide free Internet access to members of the entire community within which they are located (American Library Association [ALA], 2009; Bertot *et al*., 2008; Bertot, McClure & Jaeger, 2008).

In another study, Carlton (2009) stated that a few years ago, public libraries in the US were being written off because of the presence of different forms of technology which a few people had access to in the comfort of their homes. He noted that presently the opposite is the case, as residents especially the unemployed, now flock the library to search for job listings on the computers. Most libraries provide access to free computers and Wi-Fi services for their clients

who now know the worth of public libraries. At the Randolph County library in North Carolina for example, the number of clients who visit the library now outweigh the facilities in place. As a result, the library allots time to those who desire to use the available computers. In some other libraries, patrons need to make reservations to use the library terminals. Fitzgerald and Savage (2004) explored the effect of ICT on public libraries in the state of Victoria, Australia and found that these libraries were becoming increasingly dependent on ICT to manage access and delivery of information services.

Breeding (2012) in a study of automation of public libraries in the United States discovered that despite the country being ranked the world's wealthiest, many small public libraries in rural areas and small towns either rely on obsolete systems or have no automation in place at all. In addition, he noted that the US has some of the world's most technologically advanced libraries, but also has some for which state-of-the-art technology tools remain out of reach. Furthermore, he expressed his concern about a large number of public libraries that are lagging behind in automation.

Public libraries in India are established throughout the country in all states, in localities, as well as village levels. Patil (2013) however points out that library automation and networking in public libraries in Maharashtra, India lack the basic infrastructure needed to support the implementation of ICTs for operations as well as for user services. He found that public libraries lagged behind other libraries in the world in terms of accessibility to the common man. Singh (2012) conducted a study on the current status of automation of public libraries in Punjab state in India and discovered that despite the transformation of public libraries from providing basic services through traditional means to technology-based services, they are not able to deploy the appropriate ICT tools needed for effective automation.

However, Delhi public library in India started automation in 1995. It is the biggest public library and the busiest in South East Asia (Tyagi, 2011). Since the adoption of automation, in 1997, library materials have been logged onto the database using CDS/ISIS software. Records are stored in the database both in English and Hindi languages (Tyagi, 2011). Librarians and patrons also have access to e-mail and Internet facilities for resource sharing purposes. In-house training is organised at intervals for library professionals to keep abreast on the use of automated systems in the library.

Al-Qallaf and Al-Azmi (2002) surveyed the availability and use of information technology in public libraries in Kuwait. Their point of focus was hardware/software, Internet connectivity, training, development and future predictions concerning the use of information technologies. Questionnaires were used to gather quantitative data while interview was used for qualitative data. The questionnaires were administered to twenty-five libraries while the library administrators were interviewed. Findings showed that there were disparities in the ICTs found in the libraries. Eight of the libraries had computers in place while 15 did not have any form of ICT in place. The study revealed that only a few libraries have Internet connectivity and that application of automated systems is still low. The authors identified poor planning, poor funding, lack of qualified personnel and inappropriate building structure as some of the factors hindering the growth of ICTs in the public libraries under study. The following recommendations were made: proper planning should be done; training programs should be organised for librarians; positions such as e-librarian, cyber-librarian, systems librarian should be created and qualified staff should be assigned to head such office; sufficient funding to speed up the implementation of information technology should be made available by management and library buildings must be technology compliant.

3.3 Status of library automation in sub-Saharan Africa

A review of literature on the use of information and communication technologies (ICTs) in African public library services affirm that computerised services remain beyond the reach of most libraries, with the exception of South Africa where the conditional grant has helped in funding the automation of public libraries (Mnkeni-Saurombe & Zimu, 2013; Chisenga, 2000). The conditional grant is a project of the Department of Arts and Culture. It was established in 2007 with the aim of ensuring library development in South Africa; improving access to information; raising awareness on available library services and improving the skills of librarians among others. In 2007, the sum of one billion, three hundred million rands (R1.3 billion) was allocated to community libraries (both rural and urban) for an all-round transformation in terms of infrastructure, facilities and services (Ralebipi-Simela, 2014; Mnkeni-Saurombe & Zimu, 2013).

Elbert, Fuegi and Lipeikaite (2012) in a study on the perceptions of stakeholders and the public towards public libraries in six African countries namely; Ethiopia, Ghana, Kenya, Tanzania, Uganda and Zimbabwe, discovered that digital services such as compact discs, videos,

computers and Internet services were not readily available across all libraries in the countries sampled. Mcharazo, Kauaria and Lahti (2012) are of the opinion that there has been some level of upgrading in academic and special libraries in African countries but the status quo remains the same in public libraries.

Public libraries in the developing world including Nigeria are given less attention with regard to the implementation of automated services and are therefore less positioned to benefit from the potentials that ICTs engender (Mcharazo, Kauaria & Lahti, 2012). Challenges such as lack of infrastructure, lack of equipment, constant power outage, lack of funds and absence of trained personnel, impede successful implementation of automation in public libraries (Oliver, 2007; Eze, 2012; Jibril, 2013). Issak (2000) in a study of the state of public libraries in 10 Anglophone African countries noted that:

> *"The public library movement in Africa has been very weak, with numerous problems regarding financial constraints, lack of human resources, out-dated materials and poor use. The only sector in African society that uses public libraries is school children [who] do not use the materials held in the library but use libraries primarily as places for study because they are quieter and more spacious than their homes" (Issak, 2000:3).*

In Zimbabwe, mobile libraries are being used to reach out to disadvantaged provinces. For example, Donkey–Drawn Mobile Cart Library Services was effectively implemented by Zimbabwe's rural libraries and resources development program (Kabwato, 2009). This service has in recent times been expanded to provide the Donkey – drawn mobile cart electro-communication library to members of the community. It offers services such as radio, television, telephone, fax, e-mail and Internet services. It is powered by a solar unit installed on the rooftop of the cart (Kabwato, 2009). Kabwato (2009) recommended this system to provinces in countries that are still marginalised and do not have access to basic public library services and development opportunities. Figure 3.1 shows the donkey mobile libraries (Kowalczyk, 2015).

Figure 3.1: Donkey Mobile Libraries (Source: Kowalczyk, 2015)

Plessis (2008) asserted that public libraries in Africa are supposed to play roles that are related to that of "Community Kitchens" rather than "Food Silos". He described food silos as a place where the same food is stored with circumscribed availability. He relates this to a traditional library setting where books are the main source of information and are restricted to library users. On the other hand, he described community kitchens as a place where assorted foods are made available and served to many that want it. He equates this to public libraries and states that public libraries should be a place where assorted materials are made available to all users at different times in order to satisfy their ever-increasing information needs. He further stated that most literature on the state of libraries in Africa constitutes a "litany of woes, which can be summarised as lack of use, lack of appreciation, and lack of resources" (Plessis, 2008:44). He advised that in order for public libraries in Africa to be more relevant in this information explosion age, they must break the traditional silence that is usually linked with a library. They need to change and give room for noise. This will enable the members of the community in which it is located to have access to various forms of information.

Kavulya (2007) in a review of digital libraries and development in sub-Saharan Africa was of the opinion that libraries in Africa through huge investment and conversion into digital libraries

can contribute to advancement in the region. He emphasised that the existence of automated libraries can enable improved information gathering, processing, dissemination, access and application. This would enable sub-Saharan African countries to fill the information gaps in several segments. By so doing, they will be able to hasten up the desired change in all facets and gain from the economy of other developed nations. Literature reviewed reveals that there exists scarcity of literature documenting the adoption and use of ICTs/automated systems in public libraries in Africa.

3.4   Automation of public libraries in South West Nigeria

Library automation in Africa has gained impetus but most public libraries are yet to fully automate their services, and for those that have, there are discrepancies in the ICT facilities available (Reitz, 2004; Spiers, 2010; Graves, 2014). Library automation around the world has evolved over the years to the stage where patrons are increasingly seeking information from diverse forms of current technologies (Macdonald, 2012; Sharma, 2014). Many libraries in Nigeria did not begin automation until late 1970's (Ekpenyong, 1997). Lack of funds was a major hindrance to automation of Nigerian libraries. Ekpenyong (1997) observed that some small special libraries were able to carry out successful automation before other types of libraries. Such special libraries include:

• The International Institute for Tropical Agriculture (IITA), Ibadan. It is the largest agricultural research library in Nigeria and one of the first libraries to automate its library services. It began automation of its library services in the 1970s (Ekpenyong, 1997).

• The Nigerian Institute of International Affairs (NIIA). It is a foremost social science research library both in Nigeria and Africa. (Ekpenyong, 1997).

• The Institute for Policy and Strategic Studies, Kuru, Jos.

• The International Livestock Centre for Africa (ILCA).

• The Federal Institute for Industrial Research (FIIR), Oshodi, Lagos.

• The British Council Library.

• The United States Information Service (USIS) Library.

Libraries in some commercial banks and finance organisations were also able to carry out successful automation.

Since the inception of automation in Nigerian libraries, its importance has been acknowledged but the subject of contention is how Nigerian libraries especially public libraries can benefit as much as possible from the use of automated systems (Nkanu & Okon, 2010).

Library automation in public libraries in South West Nigeria is limited but also remains under-researched. Achebe (2005); Kadiri and Adetoro (2012) observe that the status of ICT in Nigerian public libraries is nothing to write home about perhaps because little is known about what is happening. Observing what happens in public libraries in more advanced countries of the world it is obvious that the Nigerian public libraries and librarians lag behind (Eze, 2012). Emojorho (2011) in a descriptive study on ICT and collection management in public libraries in South South Nigeria revealed that only a few ICT facilities were acquired by public libraries and the library users did not have access to them. He recommended that government should make efforts to ensure that all public libraries in Nigeria automate their library procedures and establish Internet connections; public libraries urgently needed sufficient funding in order to live up to expectation. Similarly, Ikenwe and Adegbilero-Iwari (2014) in a study of utilisation and user satisfaction of public libraries in South West Nigeria, identified lack of adequate information communication technologies as a major element hindering the satisfaction of users in public libraries in South West Nigeria.

Eze (2012) carried out a research on cataloguing in the era of ICTs in public libraries in South West Nigeria. Data was gathered by means of a structured interview. The librarians who were in charge of cataloguing and acquisition sections at the five state library boards in Abia State were involved in the study. It was observed that despite the fact that ICTs had brought numerous changes to cataloguing, making it easier, much better and making records more accurate, most Nigerian public libraries still relied on the use of traditional 3 by 5 catalogue cards. To this end, most respondents claimed that the benefits of ICTs were not being realised. The study also revealed that most public libraries in Nigeria lacked required facilities and skills. They lacked an adequate number of professionals and support staff not only in cataloguing but in other sections of the library. Summarily, the status of these public libraries was found wanting. The following recommendations were made; the state governments needed to prioritise public libraries and provide adequate budget; acquisition of current information materials in diverse formats (print and non-print) and provision of access to the Online Public Access Catalogue (OPAC).

Similarly, Kadiri and Adetoro (2012) observed that ICT is yet to take root among public libraries when compared with their academic counterparts. Although several studies such as Eze (2012); Eze (2013); Emojorho (2011); Issak (2011) have highlighted the positive contributions of adopting automation in public libraries in Nigeria, the extent remains unknown (Jibril, 2013). The present study seeks to address this gap.

3.5 Integrated library systems

Muller (2011:57) defined integrated library systems (ILS) as "multifunction, adaptable software applications that allow libraries to manage, catalogue and circulate their materials to patrons". SWAN ILS Glossary of terms (n.d.:2) defines ILS as "an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed". Pressman (2001) categorises integrated library system into two: Proprietary software and Open Source Software (OSS). Proprietary software is software that a library needs to subscribe to before having access to it. There are restrictions on its use and it has a code which is always undisclosed but revealed on subscription. The OSS does not require any form of subscriptions. It is free and constructed by enthusiastic communities of inventors (Backaitis, 2013).

The integrated library system is capable of managing several modules that are combined with a unified interface in the library. These modules include acquisition, circulation, technical services (cataloguing and classification), serials management, records management, and report generation. The acquisition module comprises vendor's database, orders, budgets and pricing information. Serials module helps in the cataloguing of periodicals such as journals, magazines and bulletins. It makes it possible for patrons to access the catalogue through online public access catalogue (OPAC). The circulation module, on the other hand, is used to handle charging and discharging of information materials, as well as help the librarian to know when information resources are overdue. Library patrons can also do an online renewal, and make reservations. This has tremendously reduced the traffic at the circulation desk. The cataloguing and classification module helps the librarian to do a proper bibliographic description of an information resource. The ILS also allows record management as well as report generation, enabling the librarian, for example, to know the number of patrons that visited the library in a day, week, or month. It is also possible to know the number of patrons that borrowed library

materials, the number of patrons that owe the library, patrons that have defaulted one way or the other.

Public libraries have different types of library-management software systems to choose from. Chisenga (2004) in a survey of the use of ICTs in African library services identified the following as software used by the libraries: ERUDITE, URICA, PALS, PROLIB, AUTOLIB, CDSISIS, FILE MAKER, MICROSOFT ACCESS, VTLS, PURNA, BILBLIOS, STYLIS, and MILLENNIUM. He observed that ERUDITE, URICA and MILLENNIUM fall into the category of very expensive software, hence only a few libraries used them. Most of the libraries involved in the study used the UNESCO'S CDS/ISIS because it is free and easy to implement. They received the software from UNESCO or from the distributors.

In selecting suitable ILS software for the library, Muller (2011) noted that it is not sufficient to focus on the performance and effectiveness of the software only. He stressed that the flexibility of the system in meeting the needs of patrons should also be put into consideration. Uzomba *et al*. (2015) in a study of the use and application of open source integrated library system in Nigerian libraries discovered that many libraries in Nigeria had experienced several challenges having adopted incorrect library software and had to discontinue its use due to technical complications. The selection of an integrated library system is, therefore, an important undertaking for any library contemplating to automate its routines. The library must select the most appropriate software in order to have value for money and to achieve efficiency, improve service delivery and reduce the cost of operation (Ukachi, Nwachukwu & Onuoha, 2014). Selection of a wrong software package can adversely affect the provision of library services to the clientele. Jadhav and Sonar (2009) in a methodical review of papers published in journals and conference proceedings recommended a standard based technique for selecting a software package. They outlined the following seven stages:

- Determine the need for acquiring the system and initial enquiry of the accessibility of packaged software.
- Short listing of candidate software.
- Excluding software packages that do not have the characteristics of the intended software or are not compatible with the existing hardware.
- Using an assessment technique to evaluate the remaining software that meets the requirements of the library and obtain a score of them.

- Carrying out additional scrutiny by getting a trial copy of top software packages and conducting an empirical assessment. It is also important to do a pre-test of the software in a suitable environment.
- Negotiating the software value, payment plan, repair and maintenance of software, delivery plan and decisions to terminate the contract if the need arises.
- Acquisition and implementation of the most suitable software package.

Similarly, Belyk and Feist (2003) suggested that selection of ideal software should be based on the following criteria:

- Cost- The cost of acquiring the software, hardware to accompany it and the cost of installation should be put into consideration before selecting software.
- Complexity- Ease of use is an important factor to be considered before selecting software. It should be easy to navigate. Librarians and patrons will be discouraged if the complex software is adopted.
- Software dependability.
- The readiness of software supplier/vendor to support the library when the need arises.

Schiff (2013) recommended eight factors to be put into consideration in selecting library software namely:

- Figure out actual need.
- Check the software supplier's credentials/ past records.
- What do other clients have to say about the product and their experiences so far?
- Will the existing system be able to handle the libraries emerging needs?
- Verify if there are hidden or additional costs.
- In a situation where the library and the supplier dissociate. Who will be the custodian of data?
- Do a test drive: Software must be tested before full implementation.
- Reach a decision on the key performance indicators before signing a contract.

Raju, Moodley, Jagarnath, Chetty, Shongwe and Raju (2007) in a study of the factors influencing the adoption of and migration of LIS in KwaZulu-Natal province noted that making a choice of ILS is a complex procedure that demands careful planning.

3.6 Factors influencing automation of public libraries

The current development of information and communication technologies (ICTs) in public libraries across the globe has influenced various aspects of human life. Many studies have been conducted to determine the factors that influence the acceptance and use of ICTs in diverse fields particularly in information studies discipline (Borrego *et al.*, 2007). These studies include Haliso (2011); Ajayi, Shorunke and Akinola (2013); Tibenderana *et al.* (2010); Ayele and Sreenivasarao (2013); and Kim and Crowston (2011). Some of these studies have resulted in theoretical models designed to address, describe and predict acceptance and use of information communication technologies (ICTs). Popular among these theories include: Technology Acceptance Model (TAM); Unified Theory of Acceptance and Use of Technology (UTAUT); Theory of Planned Behaviour (TPB); Theory of Reasoned Action (TRA); Diffusion of Innovation Theory (DOI); Motivational Model (MM); Social Cognitive Theory (SCT); Model of Personal Computer Utilisation (MPCU) and a Combination of Technology Acceptance Model (TAM) and TPB model (CTAM &TPB).

For the purpose of this study, the UTAUT developed by Venkatesh *et al.* (2003) was adopted to investigate the factors that determine the adoption and use of automated systems by librarians and patrons of public libraries in South West Nigeria. Venkatesh *et al.* (2003) after careful review of the previous models discovered that four out of seven constructs play a significant role in influencing behavioural intention to use information communication technology. These four constructs are performance expectancy, effort expectancy, social influence and facilitating conditions.

3.6.1 Performance expectancy

Performance expectancy is a term that describes, "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh *et al.*, 2003:447). Performance expectancy is a construct drawn from the UTAUT model. Other constructs from different models that are synonymous to performance expectancy include perceived usefulness (TAM/TAM2 and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (DOI) and outcome expectations (SCT). Performance expectancy

is the strongest predictor of intention to use information communication technologies (Venkatesh *et al*., 2003; Venkatesh *et al.,* 2010; Dijk *et al*., 2008).

Largely, performance expectancy determines the use or non-use of a system (Davis *et al*., 1989). There exist numerous empirical evidence in literature that corroborate this assertion (Venkatesh *et al*., 2003; Venkatesh & Davis, 2000; Agarwal & Prasad, 1999; Hu *et al*., 1999; Jackson *et al*., 1997; Venkatesh, 2000; Venkatesh & Davis, 1996; Venkatesh & Morris, 2000). The fundamental reason why users adopt automated libraries is because it satisfies their information needs (Hong e*t al*., 2002). Technology adoption research has revealed that people are not likely to favourably accept a system if it does not help them implement their job (Nysveen, Pedersen & Thornbjomsen, 2005)

Hong *et al.* (2002) studied the factors that determine user acceptance of digital libraries among students at the Open University of Hong Kong. They carried out a survey using the telephone interview method on five hundred and eighty-five (585) students who had previously utilised the digital libraries. They found that performance expectancy and effort expectancy had a significant effect on the use of digital library. However, performance expectancy had a stronger influence than effort expectancy. They identified two major reasons for performance expectancy's stronger influence. Firstly, in the initial stages of exploring the digital libraries, effort expectancy is a key factor of system use but at the advanced stages of steady use, when patrons already have better understanding and experience, the significance of effort expectancy reduces while the significance of performance expectancy increases. Secondly, since the use of digital libraries is voluntary, some students who do not have sufficient time will only make use of digital libraries if they realise that it is beneficial to their studies. The following recommendations were made in order to make the use of digital libraries more appealing: interaction with the systems should be easy; digital libraries with beneficial contents should be developed; the management of the library should organise training programs to increase computer skills of students. Moghavvemi *et al*. (2011) examined the adoption of information technologies among small and medium-sized enterprises (SME) in Malaysia. They identified performance expectancy as a vital feature that inspires the acceptance and use of new technologies by SME owners.

3.6.2   Effort expectancy

Effort expectancy is simply defined as the "degree of ease associated with the use of the system" (Venkatesh *et al*., 2003:450). Davis (1989:320) described it as "the degree to which a person believes that using a particular system would be free of effort". Davis (1989) defined effort expectancy and performance expectancy as factors that influence behavioural intention to use a system. Other constructs from different models that are synonymous to effort expectancy are perceived ease of use (TAM) and complexity (MPCU and DOI) (Davis *et al*., 1989; Venkatesh *et al*., 2003).

Tan (2013) investigated the acceptance of English e-learning websites by college students in Taiwan. Data was collected using questionnaires from one hundred and seventy-six (176) students spread across Ten (10) Taiwanese Schools. Findings revealed that effort expectancy had a positive influence on the behavioural intention of students to use the e-learning websites. Students will be encouraged to use e-learning websites if it is easy to use. It was suggested that web designers should endeavour to make web interfaces as easy as possible to enhance ease of use. Similarly, Zhou (2011) in a study of the continual use of mobile Internet opined that effort expectancy reflects perceived difficulty in using technology. He stated that if users need to exert so much energy in learning the use of a technology, they would be discontented and there exists a possibility of discontinuing its usage.

In addition, Birch and Irvine (2009) empirically studied the factors that affect teachers' intention to use information and communication technology (ICTs) in teaching students at the University of Victoria in Canada. The study adopted a mixed method approach to elicit responses from eighty-two (82) pre-service teachers that signed up for secondary education teaching programs. Findings revealed that effort expectancy was a major factor that influenced behavioural intention of teachers to utilise ICTs. It was discovered that performance expectancy, social influence, and facilitating conditions were insignificant predictors of pre-service teachers' intention to use ICT. Furthermore, Patel (2013) examined factors that determined the acceptance of enterprise social software (ESS) by IT managers in the United States. Findings showed that ease of use and usefulness are significant factors that determine the behavioural intention of managers to use ESS technology.

3.6.3   Facilitating conditions

Facilitating condition refers to "the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system" (Venkatesh *et al*., 2003:453). Tan (2013) defines facilitating condition as the provision of support for users of personal computers which may influence the utilisation of systems. This construct originated from three different theories: perceived behavioural control in TPB and C-TAM-TPB, facilitating conditions in MPCU and compatibility in DOI. Facilitating condition is one of the constructs of the UTAUT model. It consists of such factors as trust; cost; suitable hardware and software; availability of training programs; culture; language; skill and competency; privacy; support; knowledge and infrastructure. In the UTAUT model, the facilitating conditions for technology are clearly interconnected with its eventual use. People are bound to embrace technology more if there are more facilitating conditions supporting the application of such technology (Im, Hong & Kang, 2011).

Tan (2013) investigated the acceptance of English e-learning websites by college students in Taiwan and identified facilitating conditions as a factor that affects the use behaviour of college students. He elaborated that when college students get extra facilitating conditions to use the websites, they are encouraged to use the websites more regularly.

3.6.4   Social influence

Social Influence is described, as an individual's perception that a person who is important to him/her thinks s/he should use the system. (Venkatesh *et al*., 2003:451). Social influence construct originated from subjective norm in TRA, TAM2, TPB and C-TAM-TPB, social factors in MPCU and image in DOI.

Tibenderana *et al*. (2010) assert that social influence is a motivating force of intention to adopt new technologies within the e-library context. In a study on the adoption of information communication technology (ICT) services in libraries in Uganda, Tibenderana *et al*. (2010) conducted a survey using four hundred and forty-five (445) questionnaires which were administered to library end-users. Findings revealed that library patrons in Uganda were influenced by their social groups. Anandarajan *et al*. (2002) corroborated the findings of Tibenderana *et al*. (2010) in a survey of IT acceptance in Nigeria. Anandarajan *et al*. (2002) found that social pressure influenced the attitude of people in varying degrees and in diverse societies depending on the values. They emphasised that Nigeria is characterised by an

extremely collectivistic culture, therefore a person's schedules are naturally influenced by the expectations of persons surrounding him/her, particularly the group he/she identifies with. Such group identification is further transferred to the work environs, where social pressure from management has a great influence on the attitude of employees. Hence, employees accept technology not because of its perceived usefulness or ease of use but because of perceived social influence from their superiors and colleagues.

3.7 Skills needs of librarians and patrons in automated libraries

The application of various forms of ICTs has transformed the manner in which public libraries function. As a result of this transformation, there has been a plethora of novel skills, job descriptions and working atmospheres for librarians to contend with. However, Chisenga (2004) stated that one obvious characteristic of library services in Africa is the lack of ICT professionals. This was due to the fact that qualified ICT professionals prefer to work with the private sector because of the possibility of earning more than working with a public organisation such as public libraries.

It is imperative that public library staff in the new era acquire the basic skills that are needed to cope with the electronic age to perform their vital role of the organisation of the vast amount of information and resources for easy accessibility by patrons (Jibril, 2013; Hashim & Mokhtar; Hamada & Stavridi, 2014; Ashcroft, 2004).

In a study of ICT literacy among librarians, Ugwuanyi (2009) emphasised the importance of ICT skill acquisition by librarians in order to live up to their professional responsibilities. Erlendsdóttir (1998:1) stressed that as librarians,

> *"We are no longer just the guardians of books. We are information providers in an environment that are constantly changing and where information needs to be gathered quickly and effectively. Today, our mission is to promote services for the ever increasing amount of information".*

Opara (2008) is of the opinion that based on the fact that the patrons of public libraries are diverse; it is paramount for librarians to be able to meet their various needs. In doing these, the librarian requires the specialised skills and ability to be able to access and gather information resources from different sources.

In a study of the roles of a digital librarian in the management of digital information systems, Sreenivasulu (2000) stated that for a digital librarian to be referred to as competent, he/she must possess different skills, attitudes and value. One of such skills is the capacity to manage digital libraries successfully. Other skills identified include an understanding of web publishing, imaging technologies, optical character recognition and markup languages.

Choi and Rasmussen (2006) in a survey of professional librarians in the United States examined librarians' activities, competencies and gaps in training. Questionnaires were administered to 48 respondents from 39 libraries. Findings revealed that the five highest ranked skills required by librarians were communication and interpersonal skills; management/leadership skills; understanding of digital library architecture and software; knowledge of the needs of users; knowledge of technical and quality standards.

Sinclair (2009) asserts that it is important for a librarian to be "blended". According to Bell and Shank (2004), a blended librarian is one who merges traditional skills of librarianship with digital skills. Sinclair (2009) emphasised that librarians can no longer afford to fold their arms and wait for patrons to come to their desks. He stressed that digital skills must be developed in order to satisfy the information needs of the 21st-century patron.

Mahmood and Ajmal Khan (2007) opined that it is mandatory for librarians to become accustomed to the latest advancement in ICTs in libraries. However, Hashim and Mokhtar (2012) stressed that traditional skills such as information cradling skills, training and facilitating skills, evaluation skills and patron care skills are still relevant in the digital age. Librarians only need to review these skills. For instance, classification and bibliographic description skills can be used to improve patrons' knowledge of online information retrieval. Hashim and Mokhtar (2012) advised librarians/information professionals to avoid being threatened by advancement in technology; rather, they should follow the trend. Chisenga (2004) recommended that the management of public libraries should make concerted efforts to improve the capabilities of staff to effectively and efficiently utilise various forms of ICTs. This can be accomplished by organising in-house training programs, organising workshops, motivating staff to be present at external training programs organised by private firms. Still, on training, the International Federation of Library Association (IFLA) Public Library Service Guidelines (2010:66) states that:

"Training is a vital element of the activities of a public library. There must be a planned and continuous program of training for librarians at all levels, which should include both full-time and part-time staff. The rapid developments in information technology make the need for regular training even more essential, and the importance of networking and access to other information sources should be included in training programs".

3.8 Challenges of managing automated library systems

The adoption of automated systems by libraries no doubt has brought about unprecedented development in the manner of operations (Emojorho, 2011; Eze, 2012; Krubu & Osawaru, 2010). Literature reveals that there exist myriads of challenges that libraries encounter in adopting automated systems (Oyeniran & Tumba, 2011; Okojie, 2008; Gbaje, 2007). Some of these studies focused on a particular type of library but it is important to note that no matter the type of library, whether public, private, national, special, school or academic libraries, these libraries face similar challenges in the application of automated systems.

Krubu and Osawaru (2010) examined the effect of information and communication technology (ICT) in Nigerian University libraries to determine the extent of automation, to examine the usefulness of ICTs, expertise required in the use of ICTs and the factors militating against the actual use of ICTs. Findings revealed that the major factor militating against the effective adoption of ICTs was insufficient funds from parent organisations.

Chisenga (2004) in a study of the uses of ICT in African public libraries corroborated Krubu and Osawaru (2010). He surveyed ten (10) countries namely: Botswana, Ghana, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. Twenty-two public libraries participated in the survey. In some cases, it was found that computer hardware and software provided by donors have been in use for a long time and are out-dated. Subscription to CD-ROM also stopped when funding by donor agencies stopped. All the libraries that participated in the survey reported inadequacies in the budget. It was discovered that all the libraries depended on donor assistance for the procurement, maintenance and expansion of ICT facilities. About 68.2 % of the respondents admitted that inadequate funding was a major factor hindering the effective use of ICTs. In addition, Chisenga (2004) discovered that lack of precise policies was a factor hindering the effective use of ICTs in public libraries. He noted that the distribution of ICTs is done on an ad-hoc basis. Findings revealed that very few libraries have

ICT policies. Out of twenty-two public libraries studied, only seven indicated that they had ICT policies in place. Other factors affecting the use of automated systems include incessant power outage, lack of search skills, lackadaisical attitude of librarians towards automation, resistance to change by librarians, technophobia by librarians, bureaucratic procedures, time restrictions due to congested office schedules and insufficient ICT equipment. Chisenga (2004) suggested that other sources of income should be considered, as donor assistance is not sufficient and cannot be relied upon. He also advised that policies that will guide the use of ICTs in public libraries should be available.

Oliver (2007) in a study of public libraries and ICT literacy classified barriers to ICT use into two: training and access. He identified lack of training, lack of ownership of a personal computer and Internet access by library patrons as an obstacle to effective use of ICTs. In this study, the library users believed that having their own computers at home with Internet access would be advantageous as they would be able to put whatever they are taught into practice.

Jibril (2013) identified diversion of equipment and ignorance on how to manipulate ICT gadgets among the members of the community as part of challenges militating against the successful use of ICTs in public libraries. He supported Krubu and Osawaru (2010) on the challenges of adopting automated systems in public libraries.

According to Omotosho and Okiki (2012), developing countries including Nigeria, are overwhelmed by socio-economic and political problems. They stressed that this has led to the neglect of the educational sector and particularly public libraries by the government. The consequence of this neglect is that public libraries are not able to fulfil the purpose for which they were established. Omotosho and Okiki (2012) established that absence of knowledge at policy level, inadequate training of librarians, inadequate finances, lack of awareness, lack of sufficient information resources were major limitations facing public libraries. They recommended that international organisations be involved in the funding of public libraries in Nigeria, and these libraries should make the community aware of the services they are capable of rendering.

3.9   Summary of literature review

This chapter reviewed both empirical and theoretical literature. The literature was structured according to the themes derived from the various research questions. The study investigated the extent of automation of public libraries in South West Nigeria, the factors influencing

acceptance and use of ICTs in public libraries in South West Nigeria; the skills and competencies that librarians and patrons possess in the use of various ICTs; and the challenges experienced by librarians and patrons in the use of automated systems. Literature was also reviewed on the UTAUT model that underpinned this study. The literature revealed that though many studies have been carried out around the world, on the use of automated systems in public libraries, limited studies are available on Nigeria. Studies that are available seem to cover automation of academic and special libraries.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1   Introduction

Research methodology according to Rajasekar, Philominathan and Chinnathambi (2006:5) is a systematic technique to solve a problem. It involves clarifying the procedures by which researchers intend to go about their work of describing, explaining and predicting the phenomena. Kothari (2004) points out those researchers must not only be acquainted with the approaches and techniques of research, but they must also be familiar with the methodology. Hjorland (2005:145) opined that the choice of a suitable research method should be

> *"Determined by a combination of philosophical positions of the research, vis-à-vis the research objectives; the nature of the problem to be explored; its novelty in research; and the time and resource available to carry out the work".*

The purpose of this study was to investigate the extent of automation of public libraries in South West Nigeria. The following research questions were addressed: What is the level of public library automation in South West Nigeria? What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria? What are the skills and competencies that librarians and patrons possess to effectively ICTs? What challenges do librarians and patrons experience in the use of ICTs?

This chapter is organised into eleven sections. Section 4.1 introduction, section 4.2 research paradigms, section 4.3 research approach, section 4.4 research design, section 4.5 population of study, section 4.6 sampling procedure, section 4.7 validity and reliability, section 4.8 data collection procedures, section 4.9   data analysis and presentation, section 4.10 ethical considerations and section 4.11 summary.

4.2   Research paradigm

Research paradigm refers to the basic orientation to theory and research (Neuman, 2011). Creswell (2009:6) defines research paradigm as "general orientation about the world and the nature of research that a researcher holds". Guba (1990:17) refers to research paradigm as a worldview that provides "a basic set of beliefs that guide action". A paradigm, therefore, involves a design and structure of systematic and educational thoughts, principles and assumptions (Thomas, 2010). Various paradigms underpin research. The three major research

paradigms associated with the social sciences are positivism, post-positivism and interpretivism (Pickard, 2013).

Positivism is defined as the approach of the natural sciences. It simply means using scientific method and language to investigate and write about human experiences (Ryan, 2006). It is "based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, August Comte and Emmanuel Kant" (Mertens, 2005:8). Positivism presents a classical view of science and advocates that all sciences, whether natural or social should use the epistemology of pragmatism. Blaikie (2007) stated that positivism is characterised by phenomenalism, nominalism, atomism, general laws, value judgement and normative statements, verification and causation. However, after World War II, post-positivism replaced positivism (Mertens, 2005).

Post-positivism paradigm, on the other hand, refers to the thinking after positivism, challenging the traditional notion of the absolute truth of knowledge (Phillips & Burbules, 2000); and recognising that we cannot be positive about our claims of knowledge when studying the behaviour and actions of humans. Postpositivism is sometimes referred to as the scientific method or doing science research (Creswell, 2009). Teddlie and Tashakkori (2009:5) perceive post-positivism as a "revised form of positivism that addresses several of the more widely known criticisms of quantitative orientation, yet maintains an emphasis on quantitative methods".

The interpretivist paradigm, in contrast, is an approach to qualitative research with origin in hermeneutics and phenomenology. Its fundamental principle is that there is a significant difference between the subject matter of the natural and social sciences (Blaikie, 2007). Interpretivism discards the approaches of the natural sciences and affirms that social phenomena require an understanding of the social world that people have created and which they reproduce through their continuing activities (Blaikie, 2007).

This study was underpinned by the post-positivist world view. It was centred on the assumption that the method to be applied in a particular study should be selected based on the research question being addressed (Wildemuth, 1993). The post-positivist world view was also adopted because the study required a comprehensive dialogue on the extent of automation with the respondents in order to have a deep understanding of issues involved (Wolcott, 1990). Post-positivists believe that "truth is constructed through a dialogue; valid knowledge claims emerge

as conflicting interpretations and action possibilities are discussed and negotiated among the members of a community" (Wolcott, 1990:19). Postpositivist research is also characterised by gaining a comprehensive description of the phenomenon under study. Greenfield *et al*. (2007) emphasise that post-positivism recognises that research is highly important and that the researcher is usually involved in data collection and interpretation. Hence, the researcher's experience, training, and expectations will unavoidably have an effect on the research and shape the research process.

Post-positivist values in research are not about being either subjective or objective, nor do they prefer subjectivity over objectivity (Ryan, 2006; Wildemuth, 1993). Instead, they emphasise multiplicity and complexity as hallmarks of humanity. In addition, post-positivism is applicable to survey research. It is a suitable paradigm for researchers who have an interest in some aspects of positivism such as quantification and yet, desire to incorporate interpretive concerns around subjectivity and mixture of qualitative and quantitative methods (Maree, 2014). It is an approach which supports methodological pluralism (Wildemuth, 1993; Houts, Cook & Shadish, 1986; Guba, 1990).

4.3   Research approach

The combination of qualitative and quantitative methods in research is referred to as mixed methods. Johnson, Onwuegbuzie and Turner (2007) defined mixed method research as a study that involves a combination of qualitative and quantitative elements. It could also be referred to as blended research, hybrid research, integrative research, multi-method research, multiple methods, quantitative and qualitative methods, triangulated studies, ethnographic residual analysis and mixed research (Creswell, 2013; Johnson *et al*., 2007). Creswell and Plano (2011:5) identified some key components of conducting a mixed-method study. In mixed methods, a researcher

• collects and analyses persuasively and rigorously both qualitative and quantitative data (based on research questions);

• mixes (or integrates or links) the two forms of data concurrently by combining them (or merging them) sequentially by having one build on the other, or embedding one within the other;

• gives priority to one or to both forms of data (in terms of what the research emphasises);

• uses these procedures within philosophical worldviews and theoretical lenses, and

• combines the procedures into specific research designs that direct the plan for conducting the study.

Mixed method was adopted in this study because it has gained popularity and has continued to develop and advance. Qualitative and quantitative methods were merged to reinforce each other (Creswell, 2009). It was important to adopt a mixed method because the use of a single method was insufficient to address the complexity involved in this study. Its use provided more evidence for studying the research problem than either quantitative or qualitative research alone (Creswell & Clark, 2007). In addition, the use of mixed method allowed the researcher gain more insight of the study. It also provided an extended understanding of the research problem (Creswell, 2009; Ngulube, 2009). Combined or mixed-methods have been identified as a key element in the improvement of social science research (Gorard, 2004). It can also lead to a reduction in wastage of potentially valuable data and it provides the researcher with a better capacity to make proper criticisms of all kinds of research (Gorard, 2004).

Furthermore, adoption of the mixed method has been viewed as the most appropriate way for investigating a phenomenon (Creswell, 2003; Thomas, 2003). Mixed method was also adopted in this study to ensure an increase in the reliability of observation, maintain the strengths and improve on the salient weaknesses in both designs (Caruth, 2013; Greenwood & Terry, 2012; Venkatesh, Brown & Bala, 2013).

Collins *et al*. (2006) identified four rationales for conducting mixed research, participant enrichment, instrument fidelity, treatment integrity and significance enhancement. Various experimental studies in the field of library and information science have effectively applied the mixed methodological approach. They include Smarkola (2011); Evangelista, McKinnon and Sweeney (2013); Obiri-Yeboah, Fosu and Kyere-Djan (2013); and Kamau (2014). Their conclusions revealed that using mixed method adds depth to research. The qualitative findings enable the researcher to detect feebleness of quantitative method and vice versa. The authors established that the use of the mixed method in research guarantees the success of the research process as one method can enrich the findings of the other.

4.4   Research design

Research design according to Kumar (2011) is a procedural plan implemented by a researcher to respond to queries vividly, objectively and precisely. It is also defined as "procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis" (Creswell, 2003:3). It helps the researcher to make decisions and to communicate such decisions regarding; study design, data collection, study population, sampling technique, data collection instruments, analyses of data and how findings would be communicated at the end of the research. The research design also comprises rationale and justification for every decision a researcher makes on the research journey.

Blanche, Durrheim and Painter (2006) point out that research design is a strategic outline that guides research activity in order to ensure that sound conclusions are reached. According to Creswell (2009), the nature of the research problem, the subject being addressed, researchers' personal experiences and the audiences should determine the research design to be adopted for a study. Gorard (2010) is of the opinion that clarifying research design at the outset of a study is important. It helps to stimulate awareness of pitfalls and opportunities that might appear in the course of the study.

A survey is a research design that takes a cross-sectional approach to the study. It is based on a sample and has the aim of capturing all variations in the population (Babbie, 1990; Greener, 2011). Survey research design was adopted in this study. It was suitable for the study because information gathered from the sample population was used to make inferences about some features, attitude, or behaviour of the entire population. The survey research design is a preferred method in social science research and a very valuable tool for assessing opinions and trends (Babbie & Mouton, 2003; Shuttleworth, 2008). The use of survey method allowed for flexibility. It enabled the researcher to gather data through the use of various instruments such as questionnaires and focus group discussions (Babbie, 2001). Several empirical studies in the field of library and information science have effectively applied the survey research design. These include Krubu and Osawaru (2010); Aine and Omondiale (2013); Tabata and Johnsrud (2008); Smarkola (2011) and Teo (2011).

4.5 Population of study

The population is defined as a collection of elements about which a researcher wishes to make an inference (Scheaffer, Mendenhall & Ott, 2006). Leedy and Ormrod (2005:184) described it as "a homogenous group of individual unit". Banerjee and Chaudhury (2010:60) described it as an "entire group about which some information is required to be ascertained".

The target population of this study consisted of professional librarians, paraprofessional librarians and library patrons. In the context of this study, a professional librarian is a person who holds either a bachelor or master's degree in library studies, also referred to as information studies. They are employed in a professional position (Kieserman, 2014; Mc Cain & Merril, 2001).

Paraprofessional librarians, on the other hand, are those who have some level of training or proficiency in library operations but have not completed formal training for the profession, (Kieserman, 2014; McCain & Merril, 2001). They engage in library routines such as shelving, labelling, user registration and are closely supervised by the professionals. The choice of this category of staff was based on the premise that they were able to tell the researcher how they worked with various forms of ICTs to satisfy the numerous needs of patrons and their experiences with automated systems in the library. The library patrons are also referred to as the library clients/users. The choice of library patrons as respondents is based on the fact that they were the recipients of library services and were able to give valuable information about the user perspective of ICT services provided by public libraries in South West Nigeria. The relative number of the population is reflected in table 4.1 below:

Table 4.1: Relative distribution of the populations (Source: Olarongbe *et al*., 2013)

LIBRARIANS (N=35)	Oyo State	Ogun State	Lagos State
Professional Librarians	5	5	6
Paraprofessional Librarians	10	5	4
Total Number of Librarians	15	10	10
PATRONS (N=248)			
Registered Library patrons	290	214	234

4.6   Sampling procedure

Sampling is the selection of research participants from an entire population (Blanche, et al., 2006; Fraenkel & Wallen 2009). Kumar (2011) defines sampling as the process of choosing a few from a larger group. The following are some advantages of sampling in research; data is often cheaper to gather because of the reduced numbers involved; fewer people are needed to collect and analyse the data; questionnaires are faster to administer, analyse and process (Kumar, 2011; Burton, 2000). Systemtaic sampling technique was used to collect data from the patrons. The professional librarians, para-professional librarians and library patrons in Ogun, Oyo and Lagos state public libraries were the target population. The total number of librarians in the three libraries studied was 35. A census of librarians was used in this study. This is because the population is small. Israel (2009) is of the opinion that census method is attractive for a small population. He further states that a small population is 200 or less. According to Guthrie (2010:78) "census are the most complete type of survey. Census survey aims for responses from everybody in a population to get basic demographic and socioeconomic data for information and planning purpose". Krejcie and Morgan (1970) published table was used to determine sample size for the library patrons. It has been used by many researchers and still remains viable (Mathiu & Bichanga, 2014; Hashim, 2010). Krejcie and Morgan's table for determining sample size is presented in Table 4.2

Table 4.2: Krejcie and Morgan Table for Determining Sample Size (Source: Krejcie and Morgan, 1970).

N-n	N-n	N-n	N-n	N-n
10-10	100-80	280-162	800-260	2800-338
15-14	110-86	290-165	850-265	3000-341
20-19	120-92	300-169	900-269	3500-346
25-24	130-97	320-175	950-274	4000-351
30-28	140-103	340-181	1000-278	4500-354
35-32	150-108	360-186	1100-285	5000-357
40-36	160-113	380-191	1200-291	6000-361
45-40	170-118	400-196	1300-297	7000-364
50-44	180-123	420-201	1400-302	8000-367
55-48	190-127	440-205	1500-306	9000-368

60-52	200-132	460-210	1600-310	10000-370
65-56	210-136	480-241	1700-313	15000-375
70-59	220-140	500-217	1800-317	20000-377
75-63	230-144	550-226	1900-320	30000-379
80-66	240-148	600-234	2000-322	40000-380
85-70	250-152	650-242	2200-327	50000-381
90-73	260-155	700-248	2400-331	75000-382
95-76	270-159	750-254	2600-335	100000-384

According to the table, the relationship between the population and the usable sample in a research is revealed. Krejcie and Morgan (1970) stated that as the population increases, the sample size increases at a diminishing ratio and remained relatively constant at slightly more than 380 cases. Krejcie and Morgan (1970) formula is explained below:

S P = $\underline{N \times S}$

      TP

Where SP = Sample Population

     N = Population size of each group

     S = Sample size and

     TP = Total population

Based on this formula, the distribution of samples across the three public libraries is provided in Table 4.3. The Sample size that was arrived at is highlighted in Table 4.2 above.

Table 4.3: Distribution of Samples in the three Selected Public Libraries

Sample Population	Oyo State	Ogun State	Lagos State	Total
Patrons	<u>290x248</u>=97.4 = 97 738	<u>214 x 248</u> = 71.9=72 738	<u>234x248</u>=78.6=79 738	248
Total of Sample Size for patrons	97	72	79	248
Librarians	**Oyo State**	**Ogun State**	**Lagos State**	
Professional Librarians	10	5	6	21
Para Professional Librarians	5	5	4	14
Total number of Librarians	15	10	10	35

4.7   Validity and reliability

Validity means truthfulness. It refers to how well a test measures what it is supposed to measure (Pallant, 2005; Neuman, 2011). Onwuegbuzie and Johnson (2006) in their study of validity in mixed research stated that deliberations about "validity" are in their initial stages. They observed that because mixed research encompasses combining complementary strengths and non-overlapping weaknesses of quantitative and qualitative research methods, evaluating the validity of findings can be particularly difficult, yielding a problem of integration. They recommended that in mixed method research, validity should be referred to as legitimation in order to use a bilingual terminology that can be used by both quantitative and qualitative scholars. The validity of a study can be affected by poor samples, research error, poor research techniques and false measurement (Mitchell, 2005).

Reliability and validity are ideas that help to establish the truthfulness, credibility or believability of findings (Neuman, 2011). Reliability of a scale indicates how free it is from random error (Pallant, 2005). Neuman (2011) defined it as dependability or consistency. He suggests four ways of improving reliability:

- Clearly, conceptualise all constructs.
- Use a precise level of measurement.
- Use multiple indicators.
- Use of pilot study

According to Presser, Couper, Lessler, Martin, Martin, Rothgeb and Singer (2004) pretesting is the only technique that can be used to assess if respondents will have challenges with comprehending instruments in a research or not. Dillman (2000) suggested two approaches that could be used to test questions in a questionnaire. They include, "review of the questions by survey professionals and cognitive interrogation". These methods are known to be fast and economical (Tourangeau, 2004).

Reliability was ensured in this study by adhering to Dillman's suggestion. The questionnaire and focus group discussion schedule were concurrently revised by the supervisor of this thesis. He suggested some additions be made to the instruments and for some aspects to be deleted. Suggestions were also made that clearer and exact terms should be used. All corrections and suggestions made were strictly adhered to. Smith and Bowers-Brown (2010) emphasised that the use of triangulation strengthens the validity of research. Validity was ensured in the study by adopting a mixed method approach. Mixed method guaranteed the success of the study as the qualitative method enriched the findings of the quantitative method.

4.8 Data collection procedure

A variety of data collection techniques is available to survey researchers (Burton 2000). However, none of these methods offers 100 percent precision (Kumar, 2011). Quantitative and qualitative data were collected through the use of a survey questionnaire (see appendix 1) and focus group interview (see appendix 2) respectively. Interview involves communication between two or more people. It is a face-to-face encounter, supported by the use of a carefully planned questionnaire (Olsen, 2012). Kumar (2005:123) describes an interview as "any person-to-person interaction, either face to face or otherwise, between two or more individuals with a specific purpose in mind". Interviews are useful for exploring the opinions, experiences, philosophies and motivations of individual respondents (Gill, Stewart, Treasure & Chadwick, 2008). According to Gill *et al.* (2008), there are three major types of interview. They are structured, semi-structured, and unstructured.

Structured interview is an orally administered questionnaire, in which a list of predetermined questions is asked as indicated on the interview schedule. Structured interviews are quick and easy to administer (Lodico, Spaulding & Voegtle, 2010). They provide consistent information which gives room for comparability of data. They also require less interviewing expertise than the unstructured interviews (Kumar, 2011).

In contrast, semi-structured interviews comprise some vital questions that describe the aspects to be explored. The researcher develops an interview protocol that contains a list of queries to be addressed in the course of the interview (Lodico, Spaulding & Voegtle, 2010). They permit the interviewer or interviewee to deviate. The researcher can alter the order of questions, omit or add questions in order to get more details on the topic being studied. They are flexible and allow the researcher to stumble on vital information that was not predetermined (Gill *et al*., 2008).

Unstructured interviews, on the other hand, do not reflect any preconceived theories or ideas. They provide ample freedom both in content and structure for the interviewer and the interviewee (Kumar, 2011). They are performed with little or no organisation. The researcher begins by asking any question he wishes and the interview proceeds based on the initial response. Unstructured interviews are generally time-consuming and can be difficult to conduct. This is because they do not have predetermined interview questions. They are often used in a situation where significant 'depth' is needed or when the researcher does not have an idea of the subject being studied. They are also the best option when the researcher does not have more than one opportunity to interview the interviewee (Bernard, 2000).

4.8.2   Survey questionnaire

A questionnaire is a written list of questions for collecting information from respondents (Kumar, 2011). The respondent is expected to read the questions, interpret and write down the answers. Kumar (2011) stated that it is vital for a researcher to make the questionnaire as simple as possible for easy understanding. The design of the questionnaire must be pleasant to the eyes and the sequence of the questions should be easy. The questionnaire was divided into eight sections reflecting the subjects covered in the research questions, literature review and theoretical framework (See appendix 1). Section A sought to investigate demographic data of respondents; section B addressed the extent of automation; section C explored the various ICT tools used in the provision and management of information services; section D examined the skills and competencies of librarians and patrons; section E investigated attitude towards ICT use; section F sought to know how librarians and patrons used ICTs; section G examined the factors that influenced ICT use by librarians and patrons and section H explored the challenges encountered in adopting automation.

The survey questionnaires were distributed to the library patrons in the reading rooms of the libraries that were investigated. Every patron that came into the premises was a registered member. The researcher gave out the questionnaires at intervals of five respondents. The choice of the questionnaire was based on the following benefits; it is relatively quick to collect information from a large number of people and at a relatively low cost; easy access to geographically dispersed subjects; individuals are more predisposed to answer questions on sensitive issues (Rowley, 2012; Burton, 2000).

4.8.1   Focus group discussion

Focus group can be described as a small organised cluster with selected participant usually led by a moderator (Litoselliti, 2003). It can also be described as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive non- threatening environment" where participants share and react to commentaries, ideas and opinions (Krueger, 1994:6). Likewise, a focus group is defined as a group of cooperating individuals with a common interest or features brought together by a moderator, who uses the group and its communication as a technique to gain information about a subject matter (Marczak & Sewell, n.d.).

Focus group was formerly referred to as "focused interviews" or "group depth interviews" (Marczak & Sewell, n.d.). It has become more popular since 1980's because of the broader shift from quantitative to qualitative research methods (Litoelliti, 2003). It is also popular because it is intuitively appealing (Carey & Asbury, 2012). It is useful for exploring new topics and examining intricate issues. It is the best method for participants who are knowledgeable, enthusiastic and possess the capability to communicate effectively on the topic under study.

Focus groups are set up in order to explore specific subjects' people's opinions and experiences through group communication. Focus groups are special groups in terms of purpose, size, composition and procedure (Krueger 1994). It is vital that participants involved in the discussion feel calm, are not under pressure and must enjoy the discussion as much as possible (Litoselliti, 2003). Focus group discussion enhances sincerity and freedom. Similarly, focus group interview makes it possible for experiences of participants to be understood more holistically. In addition, face to face interview is the most sociable means of collecting survey data; it is easier to build up a rapport; it helps a researcher to be extremely focused in asking specific questions and the quality of information gathered is usually richer compared to that

gathered by other methods (Greener, 2011; Burton, 2000). Furthermore, focus group interview is also believed to provide a better understanding of the phenomena being studied than would be gotten from only quantitative methods (Silverman, 2000).

Focus group usually consists of roughly six to twelve people who share similar features or common interests (Department of Health and Human Services, 2008). Lodico *et al.* (2010) believe that in order to achieve optimum interaction among focus group participants, 7-10 participants is best for each group. Kitzinger (1995); Goss and Leinbach (1996) opined that focus groups usually involve between six and ten participants, but the size can vary from as few as four to as many as twelve depending on the purpose of the research. They also stated that managing, moderating and analysing results from larger groups could be difficult, but occasionally, groups with more than ten participants can be beneficial for brainstorming. Smaller groups are more proper if the goal is to explore difficult, controversial, emotional subjects, or to inspire thorough explanations. They also believed that smaller groups give more opportunity for people to talk and be more practical and as they can simply take place in the less formal setting, such as homes and cafeterias.

Focus group interview was used to elicit qualitative data from the librarians. It was a preferred method for this research because it helped the researcher to collect rich, detailed and deep strongly held beliefs and perspective (Carey & Asbury, 2012). A structured focus group interview was adopted. The professional and para-professional librarians in each library were interviewed. The focus group discussion schedule comprised of open-ended questions (see appendix 2). The population of professional and para-professional librarians in OYSLB was 15 hence, the focus group was divided into 2 groups of 7 and 8 participants respectively. SAL had a population of 10 librarians. Hence, the focus group was 1 while IOSL also with a population of 10 librarians had 1 group. The total population of librarians and grouping are presented in table 4.4 and 4.5.

Table 4.4: Librarians in focus groups

Librarians	Oyo State	Ogun State	Lagos State
Professional librarians	10	5	6
Para-professional librarians	5	5	4
Total number of librarians	15	10	10

Table 4.5: Focus groups (35)

Library	Groupings	
OYSLB	Group 1 8 participants	Group 2 7 participants
SAL	Group 1 10 participants	Nil
IOSL	Group 1 10 participants	Nil

The focus group discussion for IOSL took place on the 27 of July 2016. Eight (8) participants attended from the expected ten. Only one focus group was formed as planned. It was held within the library complex and started at 10.45am. It lasted for 1 hour and 5 minutes. Similarly, in SAL the group discussion took place on the 29 July 2016. Seven (7) participants were involved out of the targeted ten (10). Only one focus group was formed as planned. The focus group was held in the library complex and it commenced in the afternoon at 2.12pm. It lasted for 53 minutes. Likewise in OYSLB, the discussion took place on the 2 August 2016. Ten (10) participants were involved out of the target of fifteen (15). It started at 12.02pm and lasted for 46 minutes. Only one group was involved instead of two groups that were planned. The focus group in each state consisted of a mixture of professional and para-professional librarians. All the groups were highly interactive.

The questions in the schedule (see appendix 2) sought to investigate influence of ICTs on job performance; use of ICTs; roles of librarians; extent of adoption of ICTs; budgetary allocations and funding of ICTs; skills and competencies of librarians and patrons; availability and

frequency of training programs; challenges patrons and librarians encountered in adopting automated systems and suggestions on how to overcome these challenges.

4.9   Data Analysis

Analysing data in the mixed method research is one of the toughest steps in the mixed method research process (Onwuegbuzie & Combs, 2010). This is because a single analyst involved in a mixed method research must be highly competent in conducting such research. Even when an analysis is done by a competent person, he/she must be proficient at incorporating findings from both strands (Tashakkori & Teddlie, 1998).

Quantitative data was analysed using SPSS. SPSS was preferred because it is a powerful package that can handle complex statistical procedures (Pallant, 2005). Quantitative data collected was subjected to descriptive analysis to generate percentages, frequency, bar charts and cross tabulation. Descriptive analyses are techniques that are used to organise and summarise data for enhancing understanding (Onwuegbuzie & Combs, 2010).

Qualitative data analysis according to Schwandt (2007:6) means "the activity of making sense of, interpreting or theorising data". Qualitative data analysis involves analysing several types of interpretive data derived from different sources such as interviews, surveys, observation, focus groups, photographs and videos. Qualitative researchers have different techniques for analysing data. Leech and Onwuegbuzie (2007, 2008) identified eighteen methods. They are; constant comparison analysis, classical content analysis, word count, keywords-in-context, domain analysis, taxonomic analysis, componential analysis, conversation analysis, discourse analysis, secondary data analysis, membership categorization analysis, semiotics, manifest content analysis, latent content analysis, qualitative comparative analysis, narrative analysis, text mining and micro-interlocutor analysis. Qualitative data from the focus group interview schedule was analysed using thematic content analysis. Thematic content analysis was preferred because it offered an accessible and theoretically-flexible approach to analysing qualitative data. Thematic analysis also produced and presented data more effectively and it reflected the reality of data collection (Braun & Clarke, 2006; Creswell, 2009).

4.10   Ethical considerations

Ethical considerations offer direction to researchers when they encounter complex circumstances on the research journey (Greener, 2011). Ethical issues were observed in this study by following some principles suggested by Winter (1996:16-17). These include:

"The researcher must accept responsibility for maintaining confidentiality; the wishes of those who do not want to participate must be respected; permission must be obtained before making observations or examining documents produced for other purposes; all participants should be allowed to influence the work".

The ethical requirements as set out by the University of KwaZulu-Natal (UKZN) ethics policy were strictly adhered to. The proposal and ethical clearance documents were submitted to the higher degrees committee for authorization. Letters of introduction were presented to the public libraries that were involved in the study (see appendix 4, 5 and 6) after which authorization was received from the management of the libraries for the researcher to collect data from librarians and patrons (see appendix 8, 9 and 10). Informed consent was obtained from the respondents. The participants were educated on the purpose of the study and notified of their freedom to withdraw from the survey if they wished to. Names of respondents were not used in the study; instead, codes were used in place of real names.

4.11 Summary

This chapter presented the methodology used for this study. The study employed a post-positivist paradigm. A mixed method approach using a survey research design was adopted. The population of the study included professional librarians, para-professional librarians and library patrons at Oyo, Ogun and Lagos state public library boards in South West Nigeria. Data was collected by a survey questionnaire and focus group interviews.

Quantitative data was analysed using SPSS while qualitative data from the focus interview schedule was analysed by use of thematic content analysis. The ethical requirements as set out by the UKZN research policy were strictly adhered to.

DATA ANALYSIS AND PRESENTATION OF FINDINGS

5.1 Introduction

This chapter presents the findings of data collected through questionnaires and focus group discussion. The purpose of this study was to investigate the extent of automation of public libraries in South West Nigeria. The following research questions were examined:

1. What is the level of public library automation in South West Nigeria?

2 What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria?

3. What are the skills and competencies that librarians and patrons possess to effectively use ICTs?

4. What challenges do librarians and patrons experience in the use of ICTs?

This chapter covers the response rate, demographic information, themes from the research questions, theoretical framework and broader issues of the study including, the extent of automation, skills and competency of respondents in using ICTs, factors influencing the use of automated systems and challenges of using automated systems.

5.2 Response rate

Response rates are calculated by dividing the number of returned questionnaire by the total number eligible in the sample (American Association for Public Opinion Research (AAPOR), n.d). According to Fincham (2008), the goal of every researcher is to attain a response rate of approximating 60 %. He adds that a low response rate diminishes the validity and reliability of survey outcomes while high response rate decreases the risk of bias. Rogelberg, Luong, Sederburg and Cristol (2000) are of the opinion that the outcome of low response rate is few data which may eventually limit the choices of and power for statistical tests.

The response rate from the questionnaires and the focus group interview in this study were reasonably acceptable. This was accomplished by way of strong follow up on the participants involved in the survey. Two hundred and forty-eight (248) library patrons were invited to participate in the research. However, two hundred and fourteen (214) filled and returned the questionnaires giving a response rate of 86 %.

Findings also revealed that response rate of library patrons within each library was acceptable. In IOSL, expected patrons were 79 however 76 (96 %) responded. In SAL, the expected patrons were 72; 55 (76 %) responded. In OYSLB 97 patrons were targeted but 83 (86 %) responded.

Similarly, in all the three libraries, thirty-five (35) librarians comprising professional and para-professional librarians were invited to participate in the focus group discussion. However, twenty-five (71 %) participated. Findings also revealed that response rate of librarians in each library was acceptable. In IOSL, expected librarians were 10. However, 8 (80 %) responded. In SAL, the expected librarians were 10. Only 7 (70 %) responded. In OYSLB, 15 librarians were targeted and 10 (67 %) responded.

Table 5.1: Response rate for patrons of public libraries (N=248)

Public Libraries	Frequency	% Response
Ikeja Old Secretariat Library (IOSL) (n=76)	76	96
Simeon Adebo Library (SAL) (n=55)	55	76
Oyo State Library Board (OYSLB) (n=83)	83	86
Total	214	86

Table 5.2: Response rate for professional and para-professional librarians (N=35)

Public Libraries	Frequency	% Response
Ikeja Old Secretariat (IOSL) (n=8)	8	80
Simeon Adebo Library (SAL) (n=7)	7	70
Oyo State Library Board (OYSLB) (n=10)	10	67
Total	25	71

Table 5.3: Coding of focus groups

S/N	Categories	Codes
1	IOSL (n=8)	IOSL1, IOSL2, IOSL3, IOSL4, IOSL5, IOSL6, IOSL7 and IOSL8
2	SAL (n=7)	SAL1, SAL2, SAL3, SAL4, SAL5, SAL6 and SAL7
3	OYSLB (n=10)	OYSLB1, OYSLB2, OYSLB3, OYSLB4, OYSLB5, OYSLB6, OYSLB7, OYSLB8, OYSLB9 and OYSLB10

5.3 Findings from focus group discussion

This section presents findings of focus group discussion in the public libraries studied. Section 5.3 to 5.16 represent primary sources of information on library automation in public libraries. Focus group discussion took place in Lagos, Ogun and Oyo state public libraries. The focus group participants were professional and paraprofessional librarians who cut across different gender, age group, qualification, designation, years of experience and department in which they worked. In each state, respondents were allotted codes according to their sitting positions. For instance, respondents in IOSL were assigned IOSL 1-IOSL 8. Those in SAL, where assigned SAL 1-SAL 7, while those in OYSLB where assigned OYSLB 1-OYSLB 10.

5.3.1 Distribution of librarians according to libraries

Table 5.18 presents the findings of libraries and respondents that participated in the study.

Table 5. 4: Distribution of Librarians according to Libraries (N=35)

Public Libraries	Expected Respondents	Actual Respondents	% of Actual Respondents in the three libraries
Ikeja Old Secretariat (IOSL) (n=8)	10	8	80
Simeon Adebo Library (SAL) (n=7)	10	7	70
Oyo State Library Board (OYSLB) (n=10)	15	10	66.6
Total	35	25	71.4

Findings show that out of 35 librarians that were meant to participate in the focus group discussion, 25 participated. A total of 8 (32 %) were from IOSL in Lagos State; 7 (28 %) in SAL in Ogun State and 10 (40 %) in OYSLB in Oyo State.

5.3.2 Gender of librarians

The study sought to know the gender of librarians. The findings from 25 librarians who participated in the discussion are presented in Figure 5.5.

	MALE	%	FEMALE	%
IOSL (n=8)	6	75	2	25
SAL (n=7)	4	57.1	3	42.9
OYSLB (n=10)	6	60	4	40
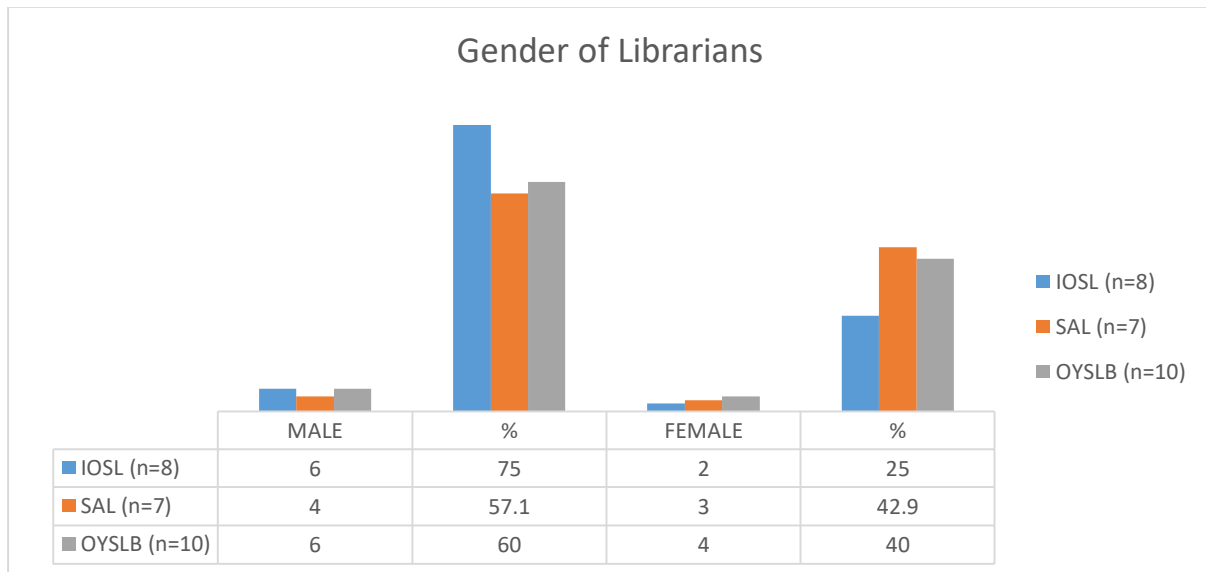
Figure 5. 1: Gender of Librarians (N=35)

Findings revealed that there were 6 (75 %) male and 2 (25 %) females in IOSL (n=8). It was also revealed that there were 4 (57.1 %) males and 3 (42.9 %) females in SAL (n=7), while OYSLB (n=10) had 6 (60 %) males and 4 (40 %) females. It was evident that there were more males than females in the three libraries.

5.3.3   Age of librarians

Respondents were asked to indicate their age group. The findings from 25 librarians are presented in Figure 5.2 below.
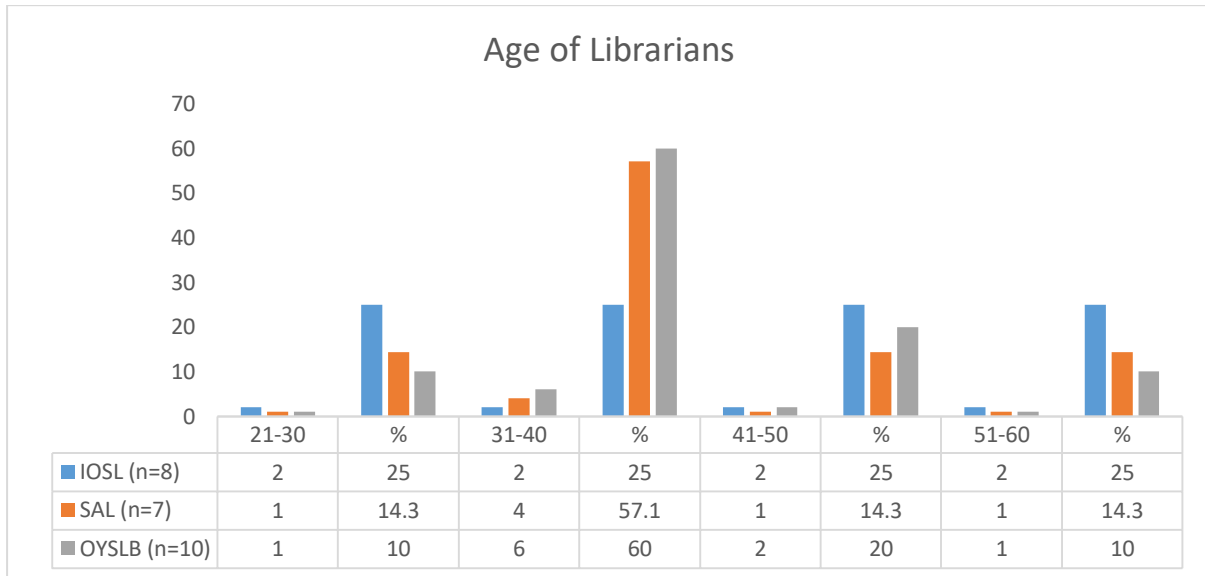
Figure 5. 2: Age of librarians (N=35)

Findings in Figure 5.2 showed that in IOSL (n=8), 2 (25 %) were within the age group of 21-30 years. Those who were within 31-40 were 2 (25 %); 41-50 years were 2 (25 %), while 51-60 years were also 2 (25 %). In SAL (n=7), 1 (14.3 %) was within 21-30 years; 4 (57.1 %) were the 31-40 years; 1 (14.3 %) was 41-50 and 51-60 respectively. Additionally, in OYSLB (n=10), only 1 (10 %) was 21-30 years; 6 (60 %) were 31-40 years; 2 (20 %) were 41-50 years and 1 (10 %) was 51-60 years.

5.3.4 Highest qualification of librarians

Respondents were asked to indicate their highest educational qualification. Their responses are presented in Figure 5.3.

	Diploma	%	First Degree	%	Masters	%
IOSL (n=8)	0	0	3	37.5	5	62.5
SAL (n=7)	1	14.3	1	14.3	5	71.4
OYSLB (n=10)	0	0	2	20	8	80
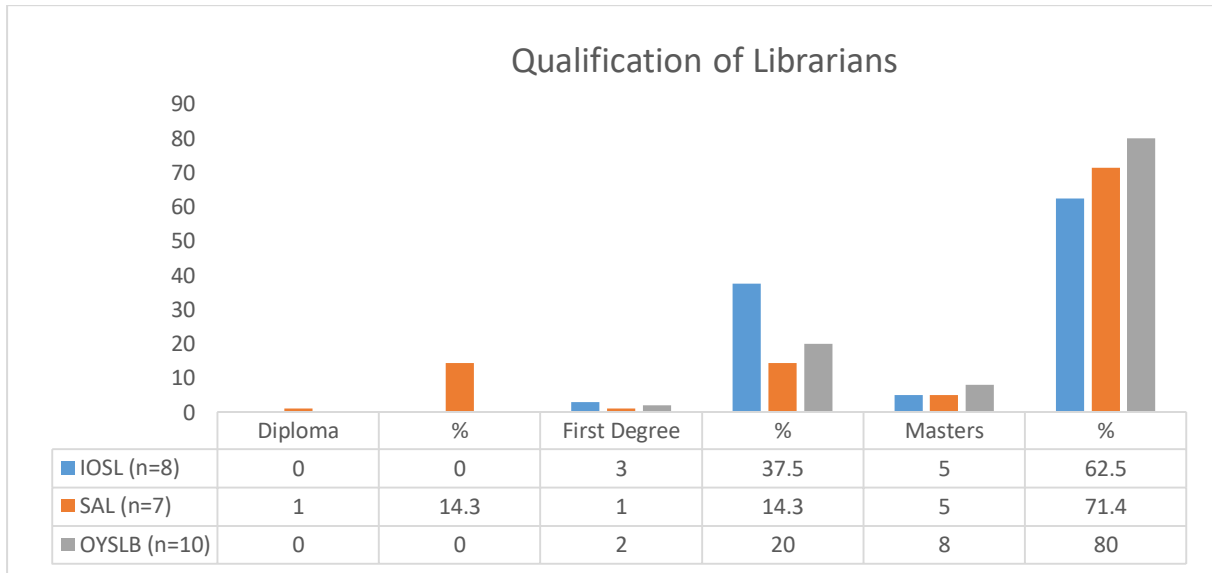
Figure 5. 3: Highest Qualification of Librarians (N=35)

Findings reveal that in IOSL (n=8), 3 (37.5 %) librarians were first degree holders, while 5 (62.5 %) possessed a masters' degree. In SAL (n=7), 1 (14.3 %) had a diploma degree; 1 (14.3 %) had a first degree, while 5 (71.4 %) had a masters' degree. In OYSLB (n=10), 2 (20 %) had a first degree, while 8 (80 %) had a masters' degree. Overall findings show that 1 (4 %) of the respondents was a diploma degree holder. First-degree holders were 6 (24 %) respondents. The majority, 18 (72 %) of the respondents were masters' degree holders while none of the respondents had a doctoral degree.

5.3.5 Designation of librarians

Librarians were asked to state their designation. The findings are presented in Figure 5.4.

Designation of Librarians

	Lib Officer	%	Librarian II	%	Librarian I	%	Senior Lib	%	Principal Lib	%	Deputy Lib	%	Director	%
IOSL (n=8)	1	12.5	2	25	1	12.5	2	25	1	12.5	1	12.5	0	0
SAL(n=7)	1	14.3	1	14.3	2	28.6	2	28.6	0	0	0	0	1	14.3
OYSLB (n=10)	1	10	1	10	4	40	3	30	0	0	1	10	0	0
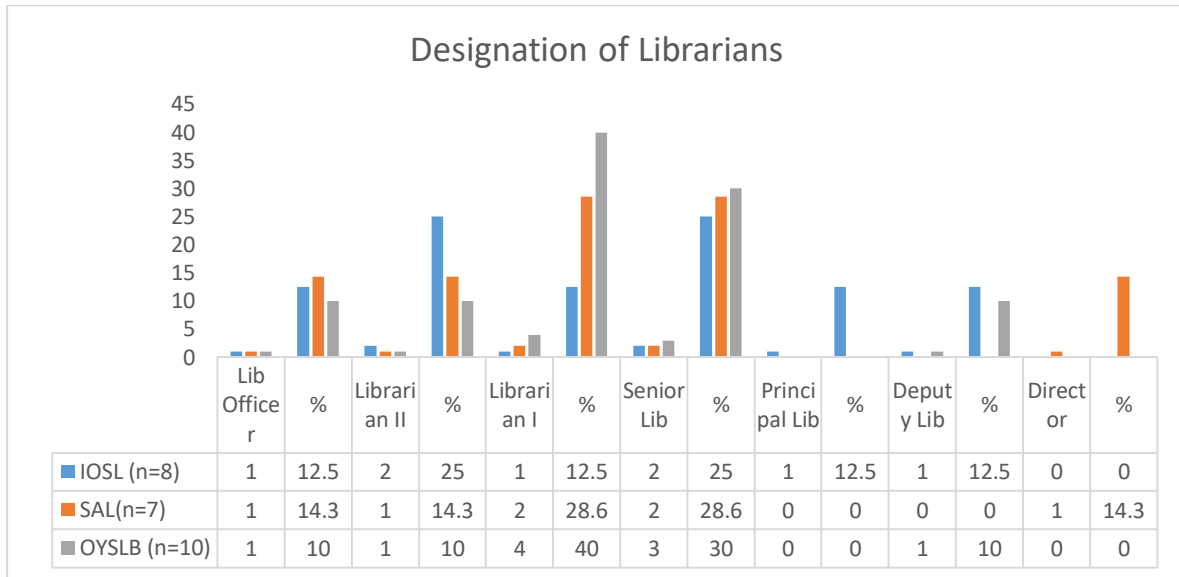
Figure 5. 4: Designation of librarians (N=35)

The findings presented in Figure 5.4 revealed the designation of 25 out of 35 respondents. In IOSL (n=8), One 1 (12.5 %) respondent was a Library Officer; 2 (25 %) were Librarian II; 1 (12.5 %) was a Librarian I; 2 (25 %) were Senior Librarians; 1 (12.5 %) was a Principal Librarian and 1 (12.5 %) was a Deputy Librarian. On the other hand, in SAL (n=7), there was 1 (14.3 %) Library Officer; 1 (14.3 %) Librarian II; 2 (28.6 %) Librarian I; 2 (28.6 %) Senior Librarians and 1 (14.3 %) Director. Finally, in OYSLB (n=10), 1 (10 %) respondent was a Library Officer; 1 (10 %) was a Librarian II; 4 (40 %) were Librarian I; 3 (30 %) were Senior Librarians and 1 (10 %) Deputy Librarian.

5.3.6   Years of experience of librarians

Librarians were asked to indicate the number of years they had worked in the public libraries. Figure 5.5 below presents the findings of 25 librarians who partook in the studies.

Years of Experience

	1-5 Years	%	6-10 Years	%	11-15 Years	%	16-20 Years	%
IOSL (n=8)	2	25	2	25	3	37.5	1	12.5
SAL (n=7)	2	28.6	2	28.6	2	28.6	1	14.3
OYSLB (n=10)	1	10	4	40	4	40	1	10
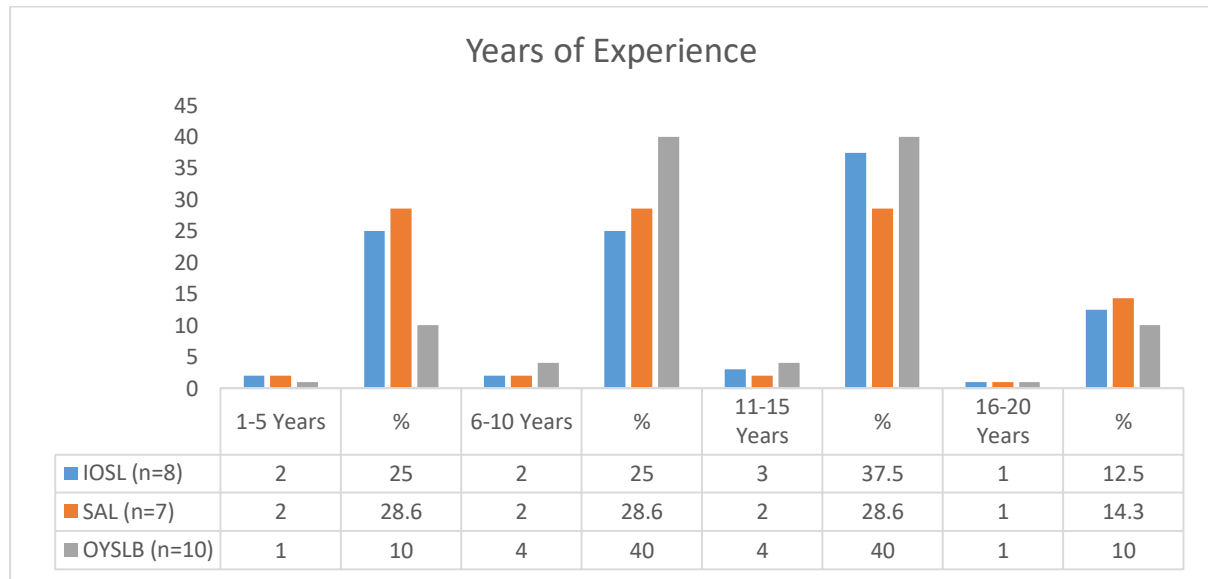
Figure 5. 5: Years of Experience of Librarians (N=35)

Findings based on individual library revealed that in IOSL (n=8), 2 (25 %) librarians had 1-5 years of experience; 2 (25 %) had 6-10 years of experience; 3 (37.5 %) had 11-15 years of experience while only 1 (12.5 %) had 16-20 years of experience. Similarly, in SAL (n=7), findings showed that 2 (28.6 %) had 1-5 years of experience; 2 (28.6 %) had 6-10 years of experience; 2 (28.6 %) had 11-15 years of experience, while 1 (14.3 %) had 16-20 years. In addition, in OYSLB (n=10), 1 (10 %) had 1-5years of experience; 4 (40 %) had 6-10 years of experience; 4 (40 %) had 11-15 years of experience and 1 (10 %) had 16-20 years.

Overall, findings indicated that 5 (20 %) of the respondents had 1-5 years of experience; 8 (32 %) had 6-10 years of experience; 9 (36 %) had 11-15 years of experience; while 3 (12 %) had 16-20 years of experience.

5.4   Services that have been automated in the library

Question 6 in the focus group discussion schedule (see appendix 2) asked the participants to state the library services that have been automated. In IOSL, respondent IOSL8 noted that the following services had been automated: New arrival awareness, selective dissemination of information and stock verification. In addition, respondent IOSL5 stated that library administration and cataloguing were automated. Similarly, respondent IOSL2 noted that user

education, collection development and report generation were automated. Additionally, respondent IOSL3 indicated library registration was automated.

Likewise in SAL, respondent SAL2 revealed that library administration had been automated. Furthermore, SAL4 said user education and library registration were automated. In addition, seven respondents said that report generation and stock verification had been automated. Three respondents said selective dissemination of information; collection development and cataloguing were automated. Furthermore, in OYSLB, respondent OYSLB5 said that collection management and selective dissemination of information had been automated. Respondent OYSLB2 noted that user education and library administration were automated. OYSLB8 said report generation was automated. Overall, the findings revealed that in all libraries studied, some library services had not been automated at all such as online renewals, serial control, interlibrary loan and public access.

5.5   What is the extent/level of automation of these services?

The study sought to investigate the extent of automation of the services mentioned above (see question 7 of appendix 2). IOSL1 had this to say, "For all the services mentioned above, in my opinion, I will say all except library administration are partially automated". IOSL6 noted, "I would not like to over-flog this, I will like to support what my colleague has said. Although the management is trying to make sure all library services are fully automated, there exist certain challenges beyond our control. As time goes on and with continual support from the government, I believe we will get there".

Similarly, in SAL, respondent SAL1 revealed that library administration was fully automated. He further mentioned that stock verification was at its initial stage, while other services mentioned above were partially automated. Respondent SAL5 said, "I think I will like to categorise all as being partially automated because when you talk about library administration, for example, there are certain aspects that I would not categorise as being fully automated like respondent SAL1 mentioned". Respondent SAL2 stated that "I think I will like to agree with the submission of respondent SAL5".

Likewise, in OYSLB, respondent OYSLB3 noted, "It is a bit difficult categorising the level of automation. All I will say is that we have a long way to go". Respondent OYSLB6 commented, "I will say all these services are at their initial stages of automation. We have not yet arrived at

all. We cannot compare what we have on ground to what exists in public libraries in other advanced countries of the world. For instance, when I visited South Africa a few years ago, I was amazed at the grounds that we still have to conquer".

It is evident from the above statements that most of the library services in all three libraries were either at the initial stage of automation or were partially automated. The findings revealed that all three libraries still had a long way to go in automation procedures.

5.6   ICT facilities available in the libraries

Respondents were asked to indicate the ICT facilities that were available in the libraries. The findings from the three libraries studied revealed that they had the same type of ICT facilities. These facilities included desktop computers, laptops, scanners, printers, photocopying machines, phones, IPad, and servers. In addition, SAL had projectors which they used for presentations and seminars.

5.7   How can you rate your level of adoption of automated systems in this library?

The respondents were asked to state the level of adoption of automated systems in their libraries. In IOSL, respondent IOSL2 stated, "Well, I will say 50% but efforts are in place to ensure that the entire library operations are automated both here in the headquarters and in all our branch libraries in Lagos State. The library management is also working tirelessly to ensure this is achieved especially through private partnership''.

Similarly, in IOSL, respondent IOSL3 noted, "In Nigeria, generally, adoption of ICTs in public library is about 40 %. There are some basic facilities that should be in place if ICTs are to be adopted such as electricity and infrastructure which for one reason or the other are not fully in place. For example, in SAL, we had all infrastructures in place but the global economic situation is affecting the sustainability. We can only pray for a change. Respondent SAL4 noted that "if I am to use percentage, I will say we have only achieved 30 %". Likewise, in OYSLB, respondent OYSLB1 said, "To face reality, we are still crawling. We have an ICT centre but when it comes to applying the technology to our basic services, I will say we have not yet arrived''.

5.8   What is the influence of ICTs on the performance of your roles?

Respondents were asked about how automation has influenced their roles as librarians. Respondents in IOSL said that the application of ICTs in their daily routine has enhanced their performance. They pointed out it saves times and reduces monotony. Respondent IOSL8 stated that in aspects of administration, ICT has been superb. Also, respondent IOSL4 mentioned that "as a cataloguer, it has made it possible to catalogue library materials according to title, author or subject easily. A library user who needs a book, for example, can either search with the name of the author, title or the subject of the book. It has made life easy". In addition, in SAL, respondent SAL6 commented that ICTs have enhanced job performance, output, efficiency, service delivery and library operations. Furthermore, respondent SAL6 indicated that ICTs enable close monitoring of activities in the library. "I get updated as quickly as possible and find it much easier to communicate with the branch libraries".

Likewise, in OYSLB, respondent OYSLB4 explained that "In line with the current trend of ICTs, it has been of great significance. Even though the library is not where it ought to be in terms of applying ICTs, the little we have been able to adopt has really helped in performing our duty. It has had a positive influence, bringing about efficient and effective service delivery". Similarly, respondent OYSLB10 stated that "for me, ICT has really been useful in answering several queries within the shortest possible time. I can easily go on the Internet to get responses to several queries patrons may ask".

5.9   What roles do you play in enhancing the use of information communication technologies among your clients?

Respondents were asked to indicate the roles they played in enhancing the use of ICTs among library clients. The findings revealed that all public libraries studied, had common ways of enhancing the use of ICTs. They encouraged the clients to make use of the available facilities in the library. Training programs were also organised though not frequently. Lastly, librarians who were highly knowledgeable in handling ICT related issues were always available to assist.

5.10   How can you rate your level of competency in the use of ICTs?

Respondents were asked to rate their level of competence in the use of ICTs. Respondent IOSL1 argued that level of competency varied. Both professional and paraprofessional librarians were highly competent; while very few were just 40-50 % competent. The same

applied to library patrons. In addition, respondent IOSL3 noted that "with the rate at which automated systems had been adopted by various organisations most especially the library, it is not a matter of choice for one to be competent in its use". Furthermore, respondent IOSL7 noted that both librarians and patrons had embraced ICT use and were doing fantastically well. "I have discovered that some schools even conduct examinations with the use of ICTs. So whether the student liked it or not, they had to be highly skilful in its use. I will like to state here that some of our patrons are even more competent than the librarians especially those in computer science field. It sounds funny but let the truth be told".

Similarly, in SAL, respondents argued that while some librarians were highly competent, there were still very few that were average. Respondents also argued that professional librarians were more competent than para-professionals. On the other hand, because the library had different category of patrons, there were those that were highly skilful, there were those that were averagely skilled, there were those that had a low level of competency and there were those that could not even handle the mouse.

Likewise in OYSLB, respondent OYSLB7 stated that "averagely we are okay, we have the skills needed to carry out our daily routine and the most important factor is to meet the needs of our clients. On the part of the patrons, about 50 % are skilful and have even gone beyond where we are in the library". In addition, respondent OYSLB9 argued that most of us are above average but there is still room for improvement if we have more frequent training programs and more infrastructures.

5.11   What type of training programs does the library have in place for librarians and patrons and how often does this take place?

Respondents were asked to indicate the training programs organised by the libraries studied and frequency of training. Findings revealed that in all the three libraries, training programs that educated the patrons on the use of the library were in place. Librarians also had training programs on how to deliver effective and efficient library services to patrons. The findings showed that in the past (about 3 years ago), training programs were organised on a quarterly basis but as at today, it has become irregular and it only takes place once in a year or at most twice due to paucity of fund. This was a common phenomenon in all the libraries studied.

5.12   Which of the library software has the library adopted for automation?

The respondents were asked to indicate the software used in the libraries for automation. Findings revealed that in the past, IOSL used Dplus Software. It was used for library routines especially cataloguing and classification of information materials. In SAL, respondent SAL7 stated that "we toiled with the idea of using the graphical library automation system (GLAS), at the point of installation; we encountered some challenges and had to put it on hold". It is important to state that the common software used in libraries such as Alice for windows, GLAS, The Information Navigator Library Software (TINLIB) and XLIB, were not made in Nigeria but are adopted by some libraries in Nigeria. This made adoption of such software difficult for many libraries because they encountered one difficulty or the other. Similarly, in OYSLB, the CDS/ISIS was used by the library. Unfortunately, it was abandoned due to lack of maintenance as findings indicated inadequate funding of the library. It was observed that all the libraries studied were using an in-house arrangement for organising the libraries. They did not have standard software in use as at the time this research was conducted.

5.13   What are the factors that influence your use of ICTs?

Respondents were asked to indicate factors that influenced the use of ICTs. The results showed that in all libraries these factors included: usefulness of the ICT (performance expectancy, ease of use, availability of infrastructure, uninterrupted power supply, support from the management of the libraries, support from the government, support from superiors, availability of quality training programs, presence of qualified and trained personnel, availability of recent technologies and good Internet access. The findings revealed that performance expectancy, effort expectancy (ease of use), facilitating conditions and social influence was key in influencing whether ICTs would be used by respondents or not.

5.14   What challenges do librarians and patrons encounter in managing automated library systems?

Respondents were asked to state the challenges the libraries encountered in the adoption of ICTs. The findings revealed that challenges libraries encountered were similar. They include inadequate funding. This was said to be the greatest challenge. In IOSL, respondent IOSL8 indicated that "we are being incapacitated by funding issues. It is not as if we do not have ideas of how to make the library a better place but if there is no money, there is nothing anybody can

do". Also, respondent IOSL4 said, "in line with what my colleague has said, funding is our major challenge, if we have funds, then the issue of inadequate training would not arise. We would be able to attend both local and international seminars and workshops. Similarly, in SAL, respondent SAL5 said, "it is believed that since public libraries do not generate revenue for the government, stakeholders were not ready to invest in them. This mentality has affected and will continue to affect the operations of public libraries if it is not changed.

The public libraries had been battling with irregular power supply. Respondents complained about the fact that there were times they had power for only two hours in a day and there were times when power was interrupted for the whole day. In OYSLB, respondent OYSLB 7 asked, "How will a library not have power for the whole day? What kind of service will that library offer? This has been a serious problem that has confronted us". Respondent OYSLB 2 also added, "If a library has the necessary infrastructure and over qualified personnel without electricity, then it is as good as having nothing. As we speak you can see that power has been interrupted. I have a presentation in the next two hours and my laptop battery is down. There is no power at home and also in the office and I do not have money to buy fuel because the last time we received our salary was a few months ago. I am just trying to recollect all I have done before so that I can jot them on paper and go ahead with my presentation". In IOSL, findings revealed that the headquarters of the public library where the research was conducted enjoyed the availability of power through the independent power project done by the Lagos State Government. However, this was not the case in the branch libraries. Even though they had generators, it was not possible to run generators for several hours due to the paucity of fund to buy fuel.

In addition, public libraries were confronted with a lack of experts in information technology. Respondent SAL7 mentioned that specialists in ICTs prefer to work with other types of libraries such as academic, special, or private organisations that are able to give them good salaries. This was also a challenge in OYSLB and IOSL. Other challenges mentioned include:

- Lack of motivation to use modern technologies: respondents noted that in Nigeria, most public librarians were not motivated enough to want to use modern technologies. Most of them do not attend training program and usually wait for the government to provide support. Unfortunately, the government does not respond in most cases.

- Technophobia: the findings revealed that some librarians especially the older generation had fear for new technologies. They believed that before the advent of ICTs they carried out their duties effectively.

- Lack of support from superiors: as a result of phobia for ICTs mentioned above, superiors who have phobia for ICTs do not give their subordinates enough support that they require.

- Librarians were poorly paid compared to their counterparts in other institutions. Respondent IOSL4 stated that "our salary structure is very poor here in the public library. I have some colleagues in the Kenneth Dike Library in the University of Ibadan who earn double of my salary. We attended the same school, did the same course and spent the same number of years in school. I must confess that it is highly discouraging and frustrating. It affects my output. Something must be done to correct this".

- Lack of policies regulating the use of automated systems.

5.15   How do you think these challenges can be surmounted?

Respondents were asked how they think the challenges listed above could be solved. Their responses are listed below.

- Policies guiding the adoption of automated systems must be designed.

- Budgetary allocation to public libraries must be increased.

- Attitudinal change on the part of the government.

- Attitudinal change on the part of librarians who have phobia for ICTs. Respondent OYSLB8 stated that "Librarians, both professional and para-professional must wake up and realise that librarianship is their profession; it is an opportunity to make an impact and whatever impact they make will determine the value the society will place on their profession".

- The Government should have the interest of public libraries at heart. Respondent SAL5 said, "Since public libraries are referred to as the "Peoples University", then they should be treated as such by giving them full attention and pumping resources into them as it is done in developed countries".

5.16   Additional comments

Respondents were asked if they had any more comments to add. Respondent OYSLB3 had this to say, "I wish the government will consider the place of information in the scheme of things and begin to see libraries especially public libraries as an engine to drive the development of our society. If this is done, then the sky will be the limit".

Respondent IOSL1 noted that "Professionals who belonged to the younger generation should try as much as possible to correct some of the anomalies and challenges in the profession. We have been raising these issues at different forums year in year out but nothing has been done. I believe the younger ones like you will be able to resolve it because librarianship is a noble profession and librarians are the embodiment of knowledge. It will be unreasonable to marginalise and frustrate professionals who find themselves in the public libraries".

Furthermore, respondent SAL2 appealed to the researcher, "I believe you will get to the top of your career and propel yourself in the realms of making policies. Please remember public libraries".

5.17   Demographic Information of Patrons

The demographic data of respondents from the three selected public libraries in South West Nigeria are presented in Figures 5.6-5.9 respectively. The results display the gender, age, highest educational qualification and duration in which patrons have used the library.

5.17.1 Gender of respondents (Patrons) (N=248)

Patrons were asked to indicate their gender. The result is based on the 214 responses that were recovered. Responses are presented in Figure 5.6 below.
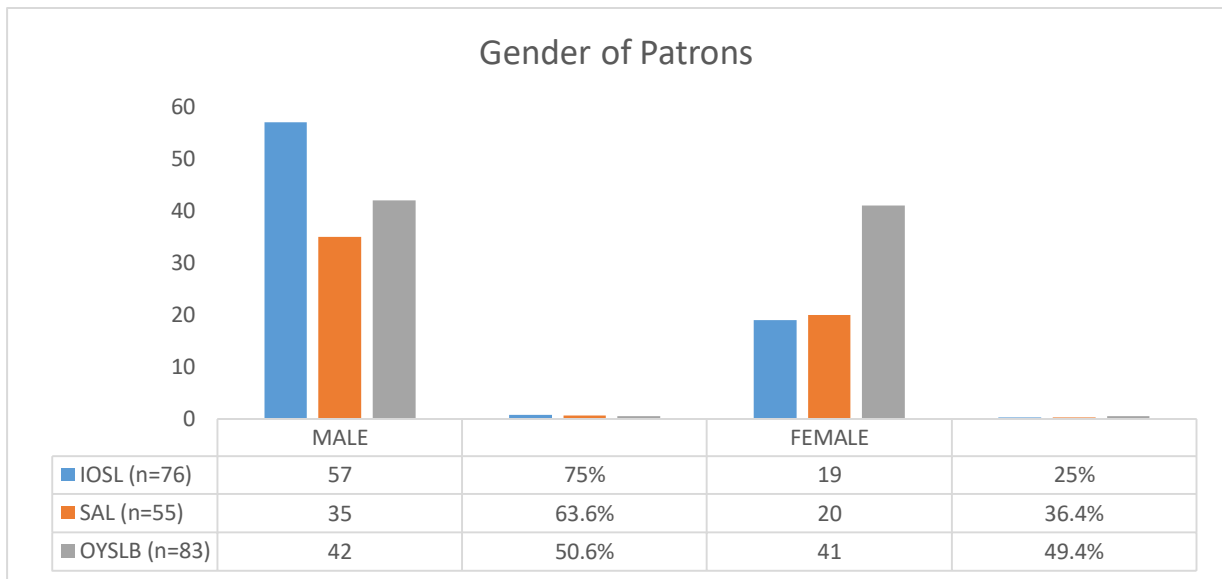
Figure 5. 6: Gender of patrons (N= 248)

The results in Figure 5.6 revealed that in Ikeja Old Secretariat Library (IOSL), (n=76) male participants were 57 (75 %) while females were 19 (25 %). In Simeon Adebo Library (SAL) (n=55), males were 35 (63.6 %) and females were 20 (36.4 %). In Oyo State Library Board (OYSLB) (n=83), males were 42 (50.6 %) and females were 41 (49.4 %) respectively. The results revealed that there were more males than females in the public libraries.

5.17.2 Age of patrons

This section provides information on the age group of 214 patrons who responded to the study out of 248. The results are provided in Figure 5.7 below.
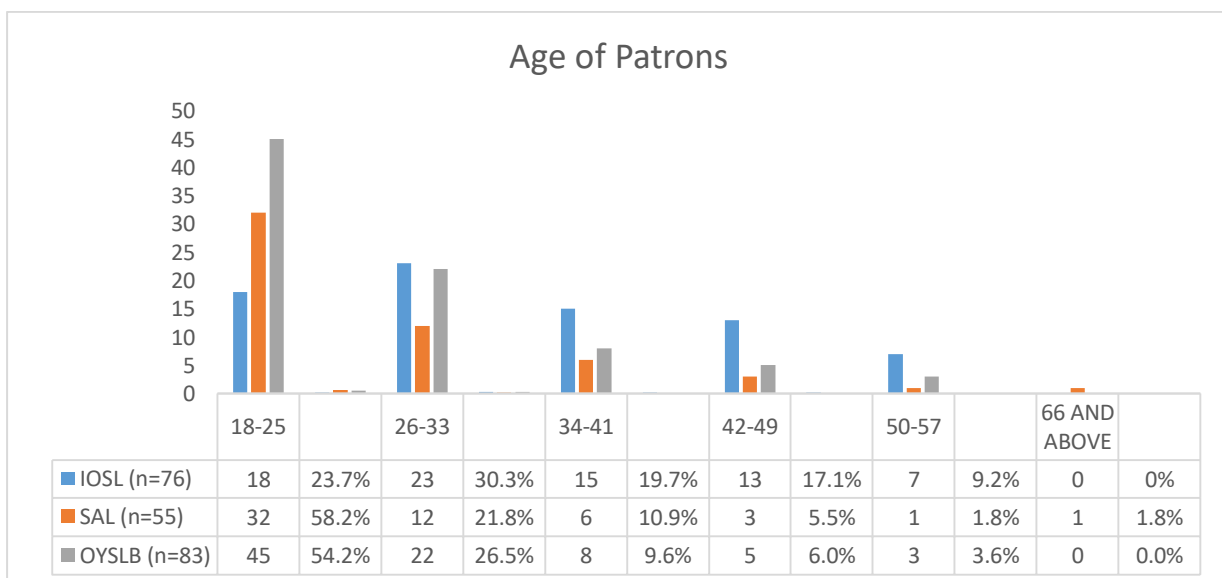
Figure 5. 7: Age of patrons (N=248)

Age distribution in figure 5.7 above revealed that in IOSL (n=76), 18 (23.70 %) patrons belonged to 18-25 age group; 15 (19.7 %) belonged to the age group 34-41; 13 (17.10 %) were aged 42-49; 7 (9.20 %) were aged 50-57 while 23 (30.3 %) were aged 26-33 which was the highest. None of the patrons belonged to 66 years and above category. In SAL (n=55), age group 18-25 had the highest respondents with a total of 32 (58.2 %). A total of 12 (21.80 %) were aged 26-33; 6 (10.90 %) were 34-41; 3 (5.5 %) were 42-49. Age group 50-57 and 66 and above were the lowest with only 1 (1.8 %) belonging to 50-57 and 66 and above respectively.

In OYSLB (n=83), age group 18-25 had the highest response. A total of 45 (54.2 %) of the patrons belonged to this category. None of the respondents belonged to 66 and above age group. The next was age group 50-57 which had only 3 (3.6 %) respondents. Age group 26-33 were 22 (26.50 %); while the age group 34-41 were 8 (9.6 %). Findings further revealed that overall, age group 18-25 had the highest number of respondents. Out of 214 respondents that were involved in the study, 95 (44.4 %) of the respondents belonged to this group.

5.17.3 Highest qualification (Patrons) (N=248)

The library patrons were asked to indicate their highest educational qualification. The results presented in Figure 5.8 below represent that of 214 participants who responded out of 248.

	SSCE		NCE		DIPLOMA		FIRST DEGREE		MASTERS		PHD		NONE	
IOSL (n=76)	15	19.7%	1	1.3%	9	11.8%	28	36.8%	20	26.3%	1	1.3%	2	2.6%
SAL (n=55)	21	38.2%	3	5.5%	6	10.9%	16	29.1%	7	12.7%	1	1.3%	1	1.8%
OYSLB (n=83)	23	27.7%	10	12%	8	9.6%	17	20.5%	16	19.3%	1	1.3%	8	9.6%
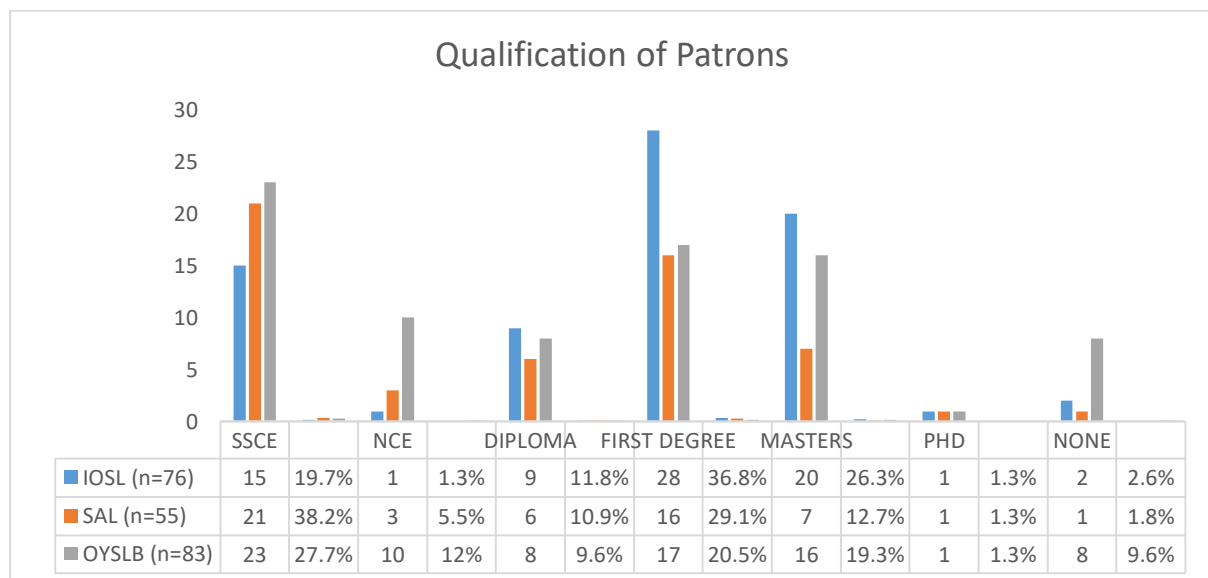
Figure 5. 8: Qualification of patrons (N=248)

The results in Figure 5.8 reveal that in IOSL (n=76), majority 28 (36.8 %) of the patrons possessed a first-degree. Next was 20 (26.3 %) respondents who had a master's degree; 15 (19.7 %) had a Senior School Certificate Examination (SSCE); 9 (11.8 %) had a diploma degree; 2 (2.60 %) of the respondents did not possess any of the degrees. The qualification that had the lowest response was Nigeria Certificate in Education (NCE) and PhD, which had 1 (1.3 %) respondent each. In SAL (n=55), most, 21 (38.2 %) of the respondents possessed SSCE; 3 (5.5 %) had a NCE; 6 (10.9 %) had a Diploma; 16 (29.1 %) had a first-degree and 7 (12.7 %) had a masters' degree. Only 1 (1.8 %) possessed a PhD and 1 (1.8 %) respondent did not state any highest qualification. In the OYSLB (n=83) SSCE had the highest number of respondents. About 23 (27.7 %) of participants indicated that they possessed SSCE. Only 1 (1.3 %) respondent possessed PhD. A total of 17 (20.5 %) had a first degree; 10 (12 %) NCE; 8 (9.60 %) had diploma; 16 (19.3 %) had masters. A total of 8 (9.60 %) did not possess any of the degrees.

5.17.4 Duration of being a library patron

The study sought to determine the number of years that the patrons had been registered in the library. The results presented in Figure 5.9 represent that of 214 participants who responded to the survey out of 248.

	1-5YEARS		6-10YEARS		11-15YEARS		16-20YEARS		21-25YEARS		26 & ABOVE	
IOSL (n=76)	41	53.9%	16	21.1%	8	10.5%	5	6.6%	4	5.3%	2	2.6%
SAL (n=55)	39	70.9%	12	21.8%	2	3.6%	2	3.6%	0	0%	0	0%
OYSLB (n=83)	59	71.1%	18	21.7%	3	3.6%	3	3.6%	0	0%	0	0%
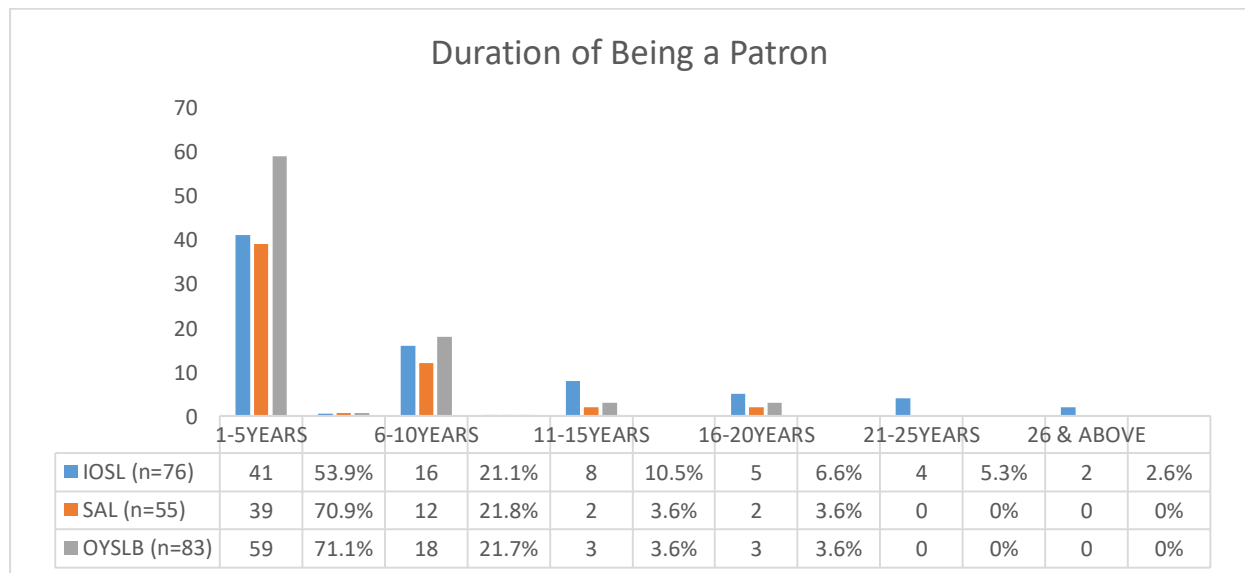
Figure 5. 9: Duration of being a library patron (N=248)

The findings in Figure 5.9 above indicated that in IOSL (n=76), most, 41 (53.90 %) of the respondents had been using the library for a period of 1-5 years. Those who had been registered for 6-10years were 16 (21.10 %); 11-15 years were 8 (10.50 %); 16-20 years were

5 (6.60 %); 21-25 were 4 (5.30 %) while very few 2 (2.6 %) had been library patrons for 25 years and above.

In SAL (n=55), the majority, 39 (70.90 %) had been registered with the library for 1-5 years. Those who had been registered for 6-10years were 12 (21.80 %); 11-15 years and 16-20 years were 2 (3.6 %) respectively. None of the patrons had been registered for 21-25 years, and 25 years and above. Similarly, in OYSLB (n=83), the majority, 59 (71.1 %) had been registered for 1-5 years. Those who had been registered for 6-10 years were 18 (21.70 %); 11-15years and 16-20years were 3 (3.6 %) respectively. Like it was in SAL (n=55), none of the patrons had been registered for 21-25 years and 25 years and above. Overall results indicated that most of the library patrons were registered with the library for 1-5 years.

5.18   Patrons awareness of services that have been automated in the libraries

This study sought to address the first research question (the extent of automation in public libraries). The results in Table 5.5 show patrons awareness of services that have been automated in the libraries. The result is based on 214 respondents who responded to the survey out of 248.

Table 5. 5: Patrons awareness of services that have been automated in the libraries (N=248)

New Arrival Awareness						
Library	Yes	%	No	%	Total	%
IOSL (n=76)	68	89.5	8	10.5	76	100
SAL (n=55)	46	83.6	9	16.4	55	100
OYSLB (n=83)	45	54.2	38	45.8	83	100
Total	159	74.3	55	25.7	214	100
Serials Control						
Library	Yes	%	No	%	Total	%
IOSL (n=76)	0	0	76	100	76	100
SAL (n=55)	0	0	55	100	55	100
OYSLB	2	2.4	81	97.6	83	100

(n=83)						
Total	2	0.9	212	99.1	214	100
Selective Dissemination of Information						
IOSL (n=76)	35	46.1	41	53.9	76	100
SAL (n=55)	20	36.4	35	63.6	55	100
OYSLB (n=83)	18	21.7	65	78.3	83	100
Total	73	34.1	141	65.9	214	100
Inter-Library Loan						
IOSL (n=76)	3	3.9	73	96.1	76	100
SAL (n=55)	0	0	55	100	55	100
OYSLB (n=83)	0	0	83	100	83	100
Total	3	1.4	211	98.6	214	100
Online Renewals						
IOSL (n=76)	1	1.3	75	98.7	76	100
SAL (n=55)	0	0	55	100	55	100
OYSLB (n=83)	0	0	83	100	83	100
Total	1	0.5	213	99.5	214	100
Circulation						
IOSL (n=76)	50	65.8	26	34.2	76	100
SAL (n=55)	9	16.4	46	83.6	55	100
OYSLB (n=83)	9	10.8	74	89.2	83	100
Total	68	31.8	146	68.2	214	100
User Education						
IOSL	60	78.9	16	21.1	76	100

(n=76)						
SAL (n=55)	26	47.3	29	52.7	55	100
OYSLB (n=83)	31	37.3	52	62.7	83	100
Total	117	54.7	97	45.3	214	100
Library Registration						
IOSL (n=76)	72	94.7	4	5.3	76	100
SAL (n=55)	55	100	0	0	55	100
OYSLB (n=83)	44	53.0	39	47.0	83	100
Total	171	79.9	43	20.1	214	100
Public Access						
IOSL (n=76)	6	7.9	70	92.1	76	100
SAL (n=55)	0	0	55	100	55	100
OYSLB (n=83)	2	2.4	81	97.6	83	100
Total	8	3.7	206	96.3	214	100
Reference Services						
IOSL (n=76)	54	71.1	22	28.9	76	100
SAL (n=55)	5	9.1	50	90.9	55	100
OYSLB (n=83)	29	34.9	54	65.1	83	100
Total	88	41.1	126	58.9	214	100

Respondents (patrons) were asked to state the services that have been automated by the libraries. Results presented in the table shows automated services in each library and the overall result. However, the overall results are discussed.

Results revealed that for creating awareness of new arrivals, 159 (74.3%) of respondents established that this service had been automated while 55 (25.7%) indicated that it was yet to

be automated. Only 2 (0.9 %) indicated that serial services had been automated while 212 (99.1 %) reported that it was yet to be automated. For selective dissemination of information, 73 (34.1 %) agreed that it had been automated while majority 141 (65.5 %) disagreed. The majority of the respondents 211 (98.6 %) indicated that interlibrary loan service was not automated.

The results also showed that 213 (99.5 %) of respondents indicated that the libraries do not provide online renewals of borrowed items while 1 (0.5 %) respondent was positive. A total of 68 (31.8 %) respondents indicated that charging and discharging of library materials have been automated. However, majority 146 (68.2 %) indicated that it was yet to be automated. Additionally, participants were asked to state if the libraries adopted automated systems for user education. A total of 117 (54.7 %) responded affirmatively while 97 (45.3 %) disagreed.

Furthermore, the results revealed that the libraries were using automated systems for library registration with 171 (79.9 %) respondents indicating yes, while 43 (20.1 %) had a different opinion. In addition, the results revealed that public access to the library did not exist. A total of 206 (96.3 %) of the respondents indicated that they did not have remote access to information materials but came physically to the library while 8 (3.7 %) said they had remote access. The results further revealed that 88 (41.1 %) specified that reference services in the libraries studied had been automated while majority 126 (58.9 %) disagreed.

5.19   Patrons awareness of ICT facilities available in the libraries

With respect to the ICT facilities available in the libraries, results of 214 participants are presented in Table 5.6 below

Table 5. 6: Patrons awareness of ICT facilities available in the libraries (N=248)

Desktop Computers								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	74	97.4	2	2.6	0	0	76	100
SAL (n=55)	55	100	0	0	0	0	55	100
OYSLB (n=83)	83	100	0	0	0	0	83	100
Total	212	99.1	2	0.9	0	0	214	100

Laptop								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	20	26.3	56	73.7	0	0	76	100
SAL (n=55)	8	14.5	47	85	0	0	55	100
OYSLB (n=83)	17	20.5	66	79.5	0	0	83	100
Total	45	21	169	79	0	0	214	100
Scanners								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	49	64.5	27	35.5	0	0	76	100
SAL (n=55)	29	52.7	26	47.3	0	0	55	100
OYSLB (n=83)	27	32.5	56	67.5	0	0	83	100
Total	105	49.1	109	50.9	0	0	214	100
Projector								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	0	0	76	100	0	0	76	100
SAL (n=55)	27	49.1	28	50.9	0	0	55	100
OYSLB (n=83)	4	4.8	79	95.2	0	0	83	100
Total	31	14.5	183	85.5	0	0	214	100
Digital Camera								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	2	2.6	74	97.4	0	0	76	100
SAL (n=55)	0	0	55	100	0	0	55	100
OYSLB (n=83)	1	1.2	82	98.8	0	0	83	100
Total	3	1.4	211	98.6	0	0	214	100

Printers								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	71	93.4	5	6.6	0	0	76	100
SAL (n=55)	51	92.7	4	7.3	0	0	55	100
OYSLB (n=83)	79	95.2	4	4.8	0	0	83	100
Total	201	93.9	13	6.1	0	0	214	100
Barcode Reader								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	0	0	76	100	0	0	76	100
SAL (n=55)	1	1.8	54	98.2	0	0	55	100
OYSLB (n=83)	0	0	83	100	0	0	83	100
Total	1	0.5	213	99.5	0	0	214	100
Fax Machine								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	22	28.9	54	71.1	0	0	76	100
SAL (n=55)	0	0	55	100	0	0	55	100
OYSLB (n=83)	3	3.6	80	96.4	0	0	83	100
Total	25	11.7	189	88.3	0	0	214	100
Mobile Phone								
Library	Yes	Yes%	No	No%	Non Response	%	Total	Total%
IOSL (n=76)	32	42.1	44	57.9	0	0	76	100
SAL (n=55)	9	16.4	46	83.6	0	0	55	100
OYSLB (n=83)	2	2.4	81	97.6	0	0	83	100
Total	43	20.1	171	79.9	0	0	214	100

Smart Phone								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	24	31.6	52	68.4	0	0	76	100
SAL (n=55)	6	10.9	49	89.1	0	0	55	100
OYSLB (n=83)	5	6.0	78	94	0	0	83	100
Total	35	16.4	179	83.6	0	0	214	100
Internet								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	65	85.1	11	14.5	0	0	76	100
SAL (n=55)	8	14.5	47	85.5	0	0	55	100
OYSLB (n=83)	5	6.0	78	94	0	0	83	100
Total	78	36.4	136	63.6	0	0	214	100
Video Conferencing								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	6	8.0	69	92	1	1.3	76	100
SAL (n=55)	0	0	55	100	0	0	55	100
OYSLB (n=83)	0	0	83	100	0	0	83	100
Total	6	2.8	207	96.7	1	0.46	214	100
Photocopying Machine								
Library	Yes	Yes %	No	No%	Non Response	%	Total	Total %
IOSL (n=76)	73	96.1	3	3.9	0	0	76	100
SAL (n=55)	54	98.2	1	1.8	0	0	55	100
OYSLB (n=83)	72	86.7	11	13.3	0	0	83	100
Total	199	93	15	7.0	0	0	214	100

The results in Table 5.6 show the ICT facilities that patrons perceived as available in the libraries. Results of each library are presented as well as a combination of the three states. However, overall results are discussed. Findings revealed that almost all respondents 212 (99.1 %) indicated that the libraries had desktop computers while only 2 (0.9 %) indicated that there were no desktop computers in the libraries. Findings also showed that laptops in the library were not as common as desktops. Overall, 169 (79 %) respondents specified that there were no laptops in the library while 45 (21 %) indicated that laptops were used in the library. It was further revealed that some of the laptops used were personal laptops of patrons and librarians. Only the director of library services and other senior staff had access to official laptops. Desktops were used by other librarians for day to day operations of the library.

Results revealed that 105 (49.1 %) of the respondents indicated that the libraries had scanners. Those who indicated the absence of scanners were 109 (50.9 %). Furthermore, results revealed that the libraries had scanners but they were used by the librarians for administrative duties and other library routines. The study found that library patrons had access to scanners outside the library premises. In addition, the use of projectors was not common in the libraries as results showed that only 31 (14.5 %) of the respondents indicated the availability of projectors in the library. The majority, 183 (85.5 %) of the respondents indicated that the libraries did not have projectors. It was also revealed that projectors were used occasionally at the SAL for presentations, especially to members of the community within which the public library is situated.

Digital cameras were not common in all the libraries. The majority, 211 (98.6 %) of the respondents agreed that there was an absence of digital cameras. Only 3 (1.4 %) indicated that the libraries had digital cameras. However, it was discovered that library patrons and librarians had their personal cameras. Furthermore, 210 (93.9 %) respondents indicated that the libraries had printers. However, only 1 (0.5 %) respondent indicated the availability of barcode readers in the libraries. Similarly, 25 (11.7 %) respondents indicated that the library had fax machines. Likewise, respondents that indicated that the libraries possessed mobile phones were 43 (20.1 %). Those that indicated that the libraries had smartphones were 35 (16.4 %). In addition, 78 (36.4 %) stated that the libraries had Internet access. Another 6 (2.8 %) indicated the availability of video conferencing facilities and the last group of 72 (86.7 %) respondents indicated that the library had photocopying machines for duplicating purposes.

5.20   Frequency of using ICT facilities in public libraries

In response to the frequency of using ICT facilities by 214 respondents, the findings are presented in Table 5.7 below

Table 5. 7: Frequency of using ICT facilities in Public Libraries (N=248)

Frequency of use of Desktop Computers													
Library	Daily		Weekly		Monthly		Rarely		Never		Non_ response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	56	73.6	15	19.7	0	0	2	2.6	1	1.3	2	2.6	76	100
SAL (n=55)	34	61.8	20	36.4	0	0	1	1.8	0	0	0	0	55	100
OYSLB (n=83)	19	22.9	26	31.3	4	4.8	32	38.6	2	2.4	0	0	83	100
Total	109	50.9	61	28.5	4	1.8	35	16.3	3	1.4	2	0.9	214	100
Frequency of use of Laptops													
Library	Daily		Weekly		Monthly		Rarely		Never		Non-_ response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	16	21	2	2.6	0	0	2	2.6	0	0	56	73.6	76	100
SAL (n=55)	1	1.8	2	3.6	1	1.8	4	7.27	1	1.8	46	83.6	55	100
OYSLB (n=83)	5	6.0	0	0	0	0	1	1.2	12	14.4	65	78.3	83	100
Total	22	10.4	4	1.8	1	0.46	7	3.27	13	6.1	167	78	214	100
Frequency of use of Scanners													
Library	Daily		Weekly		Monthly		Rarely		Never		Non- response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	7	9.2	34	44.7	7	9.2	1	1.3	0	0	27	35.5	76	100
SAL (n=55)	0	0	9	16.4	3	5.4	8	14.5	9	16.3	26	47.2	55	100
OYSLB (n=83)	0	0	0	0	0	0	5	6.0	20	24	58	70	83	100
Total	7	3.2	43	20.1	10	4.6	14	6.5	29	13.5	111	51.8	214	100
Frequency of use of Projectors													
Library	Daily		Weekly		Monthly		Rarely		Never		Non- response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%

Library	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	0	0	0	0	1	1.3	0	0	0	0	75	98.7	76	100
SAL (n=55)	0	0	0	0	1	1.8	23	41.8	5	9.0	26	47.2	55	100
OYSLB (n=83)	0	0	0	0	0	0	3	3.6	2	2.4	78	93.9	83	100
Total	0	0	0	0	2	1	26	12.1	7	3.27	179	83.6	214	100

Frequency of use of Digital Camera

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	1	1.3	3	3.9	1	1.3	0	0	0	0	71	94	76	100
SAL (n=55)	0	0	0	0	0	0	1	1.8	0	0	54	98.1	55	100
OYSLB (n=83)	0	0	0	0	0	0	0	0	0	0	83	100	83	100
Total	1	0.46	3	1.4	1	0.46	1	0.46	0	0	208	97.1	214	100

Frequency of use of Printers

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	35	46	32	42.1	1	1.3	2	2.6	0	0	6	7.9	76	100
SAL (n=55)	22	40	25	45.5	0	0	3	5.5	0	0	5	9.1	55	100
OYSLB (n=83)	5	6.0	38	46	2	2.4	26	31.3	8	9.6	4	4.8	83	100
Total	62	29	95	44.4	3	1.4	31	14.5	8	3.7	14	7	214	100

Frequency of use of Audio Visual Equipment

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	24	32	4	5.3	0	0	0	0	0	0	48	63.1	76	100
SAL (n=55)	21	38.2	15	27.3	0	0	1	1.8	0	0	18	32.7	55	100
OYSLB(n=83)	16	19.3	32	38.5	1	1.2	10	12	0	0	24	28.9	83	100
Total	61	28.5	51	23.8	1	0.46	11	5.1	0	0	90	42.1	214	100

Frequency of use of Barcode Reader

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	0	0	0	0	0	0	0	0	1	1.3	75	98.7	76	100
SAL (n=55)	0	0	0	0	0	0	1	1.8	0	0	54	98.2	55	100

OYSLB (n=83)	0	0	0	0	0	0	0	0	0	0	83	100	83	100
Total	0	0	0	0	0	0	1	0.46	1	0.46	212	99	214	100

Frequency of use of Fax Machine

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	2	2.6	11	14.5	10	13.2	4	5.2	0	0	49	64.5	76	100
SAL (n=55)	0	0	0	0	0	0	0	0	0	0	55	100	55	100
OYSLB (n=83)	0	0	0	0	0	0	0	0	3	3.6	80	96.4	83	100
Total	2	0.93	11	5.1	10	4.6	4	1.9	3	1.4	184	85.9	214	100

Frequency of use of Mobile Phone

Library	Daily		Weekly		Monthly		Rarely		Never		Non-Response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	31	40.8	0	0	0	0	0	0	0	0	45	59.2	76	100
SAL (n=55)	9	16.3	0	0	0	0	0	0	0	0	46	83.7	55	100
OYSLB (n=83)	0	0	0	0	0	0	0	0	2	2.4	81	97.5	83	100
Total	40	18.7	0	0	0	0	0	0	2	0.9	172	80.3	214	100

Frequency of use of Smart Phone

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	25	32.9	0	0	0	0	0	0	0	0	51	67.1	76	100
SAL (n=55)	5	9.1	1	1.8	0	0	0	0	0	0	49	89	55	100
OYSLB (n=83)	0	0	0	0	0	0	0	0	3	3.6	80	96.4	83	100
Total	30	14	1	0.46	0	0	0	0	3	1.4	180	84.1	214	100

Frequency of use of Internet

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	57	75	9	11.8	0	0	0	0	0	0	10	13.2	76	100
SAL (n=55)	5	9.1	1	1.8	0	0	0	0	0	0	49	89	55	100

	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
OYSLB (n=83)	2	2.4	0	0	0	0	0	0	3	3.6	78	94	83	100
Total	64	30	10	4.6	0	0	0	0	3	1.3	137	64	214	100

Frequency of use of Video Conferencing Facilities

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	0	0	0	0	0	0	2	2.6	0	0	74	97.4	76	100
SAL (n=55)	0	0	0	0	0	0	0	0	0	0	55	100	55	100
OYSLB (n=83)	0	0	0	0	0	0	0	0	0	0	83	100	83	100
Total	0	0	0	0	0	0	2	0.9	0	0	212	99	214	100

Frequency of use of Photocopying Machine

Library	Daily		Weekly		Monthly		Rarely		Never		Non-response		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IOSL (n=76)	12	16	52	68.4	3	4.0	6	7.8	0	0	3	4.0	76	100
SAL (n=55)	7	12.7	35	63.6	1	1.8	11	20	1	1.8	0	0	55	100
OYSLB (n=83)	1	1.2	14	17	6	7.2	51	61.4	9	11	2	2.4	83	100
Total	20	9.3	101	47	10	4.67	68	31.8	10	4.6	5	2.3	214	100

The findings in Table 5.7 above are presented based on individual libraries and overall. However, the overall findings are discussed. Findings revealed that 109 (50.9 %) of respondents used desktop computers on a daily basis; 61 (28.5 %) used it weekly; 4 (1.8 %) used it on a monthly basis; 35 (16.3 %) rarely used it; 3 (1.4 %) never used desktop computers, while 2(0.9 %) did not respond. On the use of laptops, 22 (10.4 %) participants used it daily; 4 (1.8 %) used it weekly; 1 (0.46 %) used it monthly, 7 (3.27 %) rarely used it; 13 (6.1 %) had never used a laptop, while 167 (78 %) did not respond. Also, 7 (3.2 %) used scanners daily; 43 (20.1 %) used it weekly; 10 (4.6 %) used it monthly; 14 (6.5 %) rarely used it; 29 (13.5 %) had never used a scanner and 111 (51.8 %) never responded.

An enquiry into the frequency of use of projectors revealed that none of the respondents used projectors daily or weekly. Only 2 (1 %) used it monthly; 26 (12.1 %) rarely used it; 7 (3.27 %) had never used a projector, while 179 (83.6 %) did not respond. The use of a printer was more popular among respondents than projector as 62 (29 %) of the respondents used it daily;

95 (44.4 %) used it weekly; 3 (1.4 %) used it monthly; 31 (14.5 %) rarely used it; 8 (3.7 %) had never used a printer, while 14 (7.0 %) did not respond. It was discovered that Audio-visual equipment had been used at one time or the other by respondents. A total of 61 (28.5 %) used them daily; 51 (23.8 %) used them on a weekly basis; only 1 (0.46 %) used them monthly, while 11 (5.1 %) rarely used them. Those who never responded were 90 (42.1 %). Similarly, digital camera was used daily by 1 (0.46 %) respondent; 3 (1.4 %) used it weekly; 1 (0.46 %) used it monthly; 1 (0.46 %) rarely used it, while 208 (97.1 %) never responded.

The use of barcode readers was the least popular as none of the respondents used it daily; neither did they use it weekly nor monthly. However, only 1 (0.46 %) patron indicated the rare use of barcodes. In addition, 1 (0.46 %) patron indicated that he had never used barcode, while the remaining 212 (99 %) did not respond to the question. Furthermore, patrons were asked to state the frequency of using a fax machine. Only 2 (0.93 %) stated that they used it daily. A total of 11 (5.1 %) used it weekly; 10 (4.6 %) used it monthly; 4 (1.9 %) rarely used it; 3 (1.4 %) had never used it, while 184 (85.9 %) never responded. A total of 40 (18.7 %) used mobile phones daily; none used it weekly, monthly or rarely; 2 (0.9 %) had never used it and 172 (80.3 %) did not respond to the section. Smartphones were used daily by 30 (14 %) of patrons; 1 (0.46 %) used it weekly; 3 (1.4 %) had never used it and 180 (84.1 %) did not respond.

Moreover, respondents were asked to indicate how often they used the Internet. About 64 (30 %) specified that they used the Internet daily; 10 (4.6 %) indicated weekly; 3 (1.3 %) stated that they have never used the Internet, while 137 (64 %) neither indicated any frequency of use. Video conferencing was not popular in the libraries as only 2 (0.9 %) respondents indicated that they rarely used it; other 212 (99 %)) patrons never responded. Finally the use of photocopying machine gained some popularity as 20 (9.3 %) respondents indicated that they used it daily; 101 (47 %) indicated weekly; 10 (4.7 %) monthly; 68 (31.8 %) indicated rarely; 10 (4.6 %) stated that they have never used a photocopying machine, while 5 (2.3 %) did not respond. Overall, the findings showed that most respondents were familiar with the use of most of the ICT facilities in the library.

5.21   ICT enhancement of the use of the library

Respondents were asked to indicate if ICTs enhanced their use of libraries. The respondents were to choose from (S/A) - strongly agree; (A) - agree; (D) - disagree; (SD) - strongly disagree and (NAD) -neither agree nor disagree. The findings from 214 respondents are presented in Table 5.8.

Table 5. 8: How ICT enhanced use of the library (N=248)

Desktop												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	57	75.0	16	21.1	1	1.3	1	1.3	1	1.3	76	100
SAL (n=55)	33	60.0	16	29.1	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	39	47.0	43	51.8	1	1.2	0	0	0	0	83	100
Total	129	60.3	75	35.0	6	2.8	3	1.4	1	0.5	214	100
Laptop												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	45	59.2	27	35.5	2	2.6	1	1.3	1	1.3	76	100
SAL (n=55)	24	43.6	25	45.5	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	36	43.4	44	53.0	3	3.6	0	0	0	0	83	100
Total	105	49.1	96	44.9	9	4.2	3	1.4	1	0.5	214	100
Scanners												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	26	34.2	44	57.9	5	6.6	1	1.3	0	0	76	100
SAL (n=55)	13	23.6	36	65.5	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	10	12.0	55	66.3	16	19.3	1	1.2	1	1.2	83	100
Total	49	22.9	135	63.1	25	11.7	4	1.9	1	0.5	214	100
Projector												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	4	5.3	30	39.5	25	32.9	7	9.2	10	13.2	76	100
SAL (n=55)	7	12.7	38	69.1	4	7.3	3	5.5	3	5.5	55	100
OYSLB (n=83)	0	0	23	27.7	40	48.2	14	16.9	6	7.2	83	100

Total	11	5.1	91	42.5	69	32.2	24	11.2	19	8.9	214	100
Digital Camera												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	12	15.8	48	63.2	11	14.5	4	5.3	1	1.3	76	100
SAL (n=55)	2	3.6	39	70.9	11	20.0	2	3.6	1	1.8	55	100
OYSLB (n=83)	0	0	23	27.7	53	63.9	3	3.6	4	4.8	83	100
Total	14	6.5	110	51.4	75	35.0	9	4.2	6	2.8	214	100
Printers												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	49	64.5	26	34.2	0	0	1	1.3	0	0	76	100
SAL (n=55)	32	58.2	17	30.9	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	15	18.1	66	79.5	2	2.4	0	0	0	0	83	100
Total	96	44.9	109	50.9	6	2.8	3	1.4	0	0	214	100
Audio Visual Equipment												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	14	18.4	57	75.0	3	3.9	2	2.6	0	0	76	100
SAL (n=55)	20	36.4	28	50.9	3	5.5	3	5.5	1	1.8	55	100
OYSLB (n=83)	6	7.2	70	84.3	4	4.8	0	0	3	3.6	83	100
Total	40	18.7	155	72.4	10	4.7	5	2.3	4	1.9	214	100
Barcode Reader												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	2	2.6	27	35.5	23	30.3	16	21.1	8	10.5	76	100
SAL (n=55)	1	1.8	27	49.1	15	27.3	4	7.3	8	14.5	55	100
OYSLB (n=83)	0	0	15	18.1	58	69.9	4	4.8	6	7.2	83	100
Total	3	1.4	69	32.2	96	44.9	24	11.2	22	10.3	214	100
Fax Machine												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL n=76)	4	5.3	54	71.1	10	13.2	7	9.2	1	1.3	76	100
SAL (n=55)	1	1.8	39	70.9	14	25.5	1	1.8	0	0	55	100

| OYSLB (n=83) | 0 | 0 | 26 | 31.3 | 43 | 51.8 | 4 | 4.8 | 10 | 12.0 | 83 | 100 |
| Total | 5 | 2.3 | 119 | 55.6 | 67 | 31.3 | 12 | 5.6 | 11 | 5.1 | 214 | 100 |

Mobile Phone

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	51	67.1	22	28.9	1	1.3	2	2.6	0	0	76	100
SAL (n=55)	22	40.0	20	36.4	10	18.2	1	1.8	2	3.6	55	100
OYSLB (n=83)	10	12.0	47	56.6	20	24.1	2	2.4	4	4.8	83	100
Total	83	38.8	89	41.6	31	14.5	5	2.3	6	2.8	214	100

Smart Phone

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	52	68.4	22	28.9	1	1.3	1	1.3	0	0	76	100
SAL (n=55)	29	52.7	17	30.9	8	14.5	1	1.8	0	0	55	100
OYSLB (n=83)	30	36.1	49	59.0	3	3.6	1	1.2	0	0	83	100
Total	111	51.9	88	41.1	12	5.6	3	1.4	0	0	214	100

Internet

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	54	71.1	20	26.3	0	0	1	1.3	1	1.3	76	100
SAL (n=55)	32	58.2	17	30.9	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	32	38.6	51	61.4	0	0	0	0	0	0	83	100
Total	118	55.1	88	41.1	4	1.9	3	1.4	1	0.5	214	100

Video Conferencing

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	6	7.9	41	53.9	9	11.8	11	14.5	9	11.8	76	100
SAL (n=55)	4	7.3	30	54.5	14	25.5	3	5.5	4	7.3	55	100
OYSLB (n=83)	3	3.6	31	37.3	34	41.0	8	9.6	7	8.4	83	100
Total	13	6.1	102	47.7	57	26.6	22	10.3	20	9.3	214	100

Photocopying Machine

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	43	56.6	28	36.8	2	2.6	2	2.6	1	1.3	76	100

SAL (n=55)	17	30.9	30	54.5	6	10.9	2	3.6	0	0	55	100
OYSLB (n=83)	4	4.8	60	72.3	15	18.1	2	2.4	2	2.4	83	100
Total	64	29.9	118	55.1	23	10.7	3	1.4	3	1.4	214	100

The study sought to enquire if patrons agreed or not whether ICT enhanced the use of the library. The table displays findings of each state and overall responses. Findings revealed that 129 (60.3 %) respondents indicated that they strongly agreed that the use of desktop computers enhanced their use of the library; 75 (35 %) agreed; 6 (2.8 %) disagreed; 3 (1.4 %) strongly disagreed and 1 (0.5 %) neither agreed nor disagreed. Secondly, 49 (22.9 %) strongly agreed that laptops enhanced their use of the library; 135 (63.1 %) agreed; 25 (11.7 %) disagreed; 4 (1.9 %) strongly disagreed and 1 (0.5 %) neither agreed nor disagreed. Similarly, 49 (22.9 %) strongly agreed that scanners enhanced their use of the library; 135 (63.1 %) agreed; 25 (11.7 %) disagreed; 4 (1.9 %) strongly agreed while 1 (0.5 %) neither agreed nor disagreed. In addition, the use of projectors had 11 (5.1 %) participants who strongly agreed that its use has enhanced their use of the library. A total of 91 (42.5%) agreed; 69 (32.2%) disagreed; 24 (11.2%) strongly disagreed and 19 (8.9%) neither agreed nor disagreed.

Likewise, for the use of digital camera, 14 (6.5%) responded that they strongly agreed that it had enhanced their use of library; 110 (51.4%) agreed; 75 (35.0%) disagreed; 9 (4.2%) strongly disagreed, while 6 (2.8%) neither agreed nor disagreed. Similarly, 96 (44.9%) respondents strongly agreed that printers have enhanced their use of libraries; 109 (50.9%) agreed; 6 (2.8%) disagreed and 3 (1.4%) strongly disagreed. Additionally, 40 (18.7%) strongly agreed that the use of audiovisuals has enhanced their use of the library; 155 (72.4%) agreed; 10 (4.7%) disagreed; 5 (2.3%) strongly disagreed and 4 (1.9%) were neutral.

In addition, 3 (1.4%) of respondents strongly agreed that barcode reader enhanced their use of the library; 69 (32.2%) agreed; majority 96 (44.9%) disagreed; 24 (11.2%) strongly disagreed, while 22 (10.3%) neither agreed nor disagreed. It was discovered that 5 (2.3%) strongly agreed that fax machines enhanced their use of the library; 119 (55.6%) agreed; 67 (31.3%) disagreed; 12 (5.6%) strongly disagreed, while 11 (5.1%) neither agreed nor disagreed. Findings also revealed that 83 (38.8%) of respondents strongly agreed that the use of mobile phones has enhanced their use of the library; 89 (41.6%) agreed; 31 (14.5%) disagreed; 5 (2.3%) strongly disagreed and 6 (2.8%) neither agreed nor disagreed. More respondents 111 (51.9%) strongly

agreed that the use of smartphones enhanced their use of the library than they did for mobile phones. A total of 88 (41.1%) agreed; 12 (5.6%) disagreed and 3 (1.4%) strongly disagreed.

Furthermore, the use of Internet had 118 (55.1 %) respondents who strongly agreed that it had improved their use of the library; 88 (41.1 %) agreed; 4 (1.9 %) disagreed; 3 (1.4 %) strongly disagreed, while 1 (0.5 %) neither agreed nor disagreed. Only 13 (6.1 %) participants strongly agreed that the use of video conferencing facilities has improved their use of the library; 102 (47.7 %) agreed; 57 (26.6 %) disagreed; 22 (10.3 %) strongly disagreed and 20 (9.3 %) neither agreed nor disagreed. Finally, 64 (29.9 %) strongly agreed that the use of photocopying machine had enhanced their use of the library. Majority 118 (55.1 %) agreed; 23 (10.7 %) disagreed; 3 (1.4 %) strongly disagreed, while 3 (1.4 %) neither agreed nor disagreed.

5.22 Proficiency in the use of ICTs

Respondents were asked to indicate their level of proficiency in the use of ICTs on the following scale: NS- not skilled; LL-low level; AL- average level; HL- high level and EL- excellent level. The responses of 214 patrons who participated in the survey are presented in Table 5.9

Table 5. 9: Proficiency in the use of ICTs (N=248)

Desktop												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	2	2.6	10	13.2	38	50.0	26	34.2	76	100
SAL (n=55)	0	0	5	9.1	14	25.5	29	52.7	7	12.7	55	100
OYSLB (n=83)	0	0	5	6.0	24	28.9	44	53.0	10	12.0	83	100
Total	0	0	12	5.6	48	22.4	111	51.9	43	20.1	214	100
Laptop												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	3	3.9	20	26.3	37	48.7	16	21.1	76	100
SAL (n=55)	0	0	5	9.1	21	38.2	24	43.6	5	9.1	55	100
OYSLB (n=83)	1	1.2	4	4.8	31	37.3	39	47.0	8	9.6	83	100
Total	1	0.5	12	5.6	72	33.6	100	46.7	29	13.6	214	100
Scanner												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%

IOSL (n=76)	1	1.3	4	5.3	39	51.3	26	34.2	6	7.9	76	100
SAL (n=55)	1	1.8	10	18.2	29	52.7	14	25.5	1	1.8	55	100
OYSLB (n=83)	4	4.8	6	7.2	46	55.4	25	30.1	2	2.4	83	100
Total	6	2.8	20	9.3	114	53.3	65	30.4	9	4.2	214	100

Projector

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	11	14.5	36	47.4	25	32.9	3	3.9	1	1.3	76	100
SAL (n=55)	9	16.4	9	16.4	25	45.5	11	20.0	1	1.8	55	100
OYSLB (n=83)	34	41.0	19	22.9	27	32.5	2	2.4	1	1.2	83	100
Total	54	25.2	64	29.9	77	36.0	16	7.5	3	1.4	214	100

Digital Camera

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	1	1.3	5	6.6	42	55.3	23	30.3	5	6.6	76	100
SAL (n=55)	5	9.1	2	3.6	32	58.2	13	23.6	3	5.5	55	100
OYSLB (n=83)	5	6.0	2	2.4	42	50.6	30	36.1	4	4.8	83	100
Total	11	5.1	9	4.2	116	54.2	66	30.8	12	5.6	214	100

Printers

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	1	1.3	2	2.6	14	18.4	44	57.9	15	19.7	76	100
SAL (n=55)	2	3.6	4	7.3	18	32.7	26	47.3	5	9.1	55	100
OYSLB (n=83)	3	3.6	4	4.8	41	49.4	28	33.7	7	8.4	83	100
Total	6	2.8	10	4.7	73	34.1	98	45.8	27	12.6	214	100

Audio Visual Equipment

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	4	5.3	37	48.7	29	38.2	6	7.9	76	100
SAL (n=55)	0	0	6	10.9	24	43.6	20	36.4	5	9.1	55	100
OYSLB (n=83)	3	3.6	4	4.8	40	48.2	30	36.1	6	7.2	83	100
Total	3	1.4	14	6.5	101	47.2	79	36.9	17	7.9	214	100

Barcode												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	20	26.3	26	34.2	23	30.3	6	7.9	1	1.3	76	100
SAL (n=55)	23	41.8	8	14.5	21	38.2	3	5.5	0	0	55	100
OYSLB (n=83)	54	65.1	4	4.8	23	27.7	1	1.2	1	1.2	83	100
Total	97	`45.3	38	17.8	67	31.3	10	4.7	2	0.9	214	100

Fax Machine												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	5	6.6	20	26.3	42	55.3	7	9.2	2	2.6	76	100
SAL (n=55)	18	32.7	3	5.5	30	54.5	3	5.5	1	1.8	55	100
OYSLB (n=83)	37	44.6	16	19.3	24	28.9	6	7.2	0	0	83	100
Total	60	28.0	39	18.2	96	44.9	16	7.5	3	1.4	214	100

Mobile Phone												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	0	0	2	2.6	34	44.7	40	52.6	76	100
SAL (n=55)	0	0	0	0	5	9.1	29	52.7	21	38.2	55	100
OYSLB (n=83)	0	0	0	0	9	10.8	47	56.6	27	32.5	83	100
Total	0	0	0	0	16	7.5	110	51.4	88	41.1	214	100

Smart Phone												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	1	1.3	4	5.3	39	51.3	32	42.1	76	100
SAL (n=55)	0	0	0	0	7	12.7	34	61.8	14	25.5	55	100
OYSLB (n=83)	0	0	2	2.4	17	20.5	42	50.6	22	26.5	83	100
Total	0	0	3	1.4	28	13.1	115	53.7	68	31.8	214	100

Internet												
Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	1	1.3	8	10.5	38	50.0	29	38.2	76	100
SAL (n=55)	0	0	3	5.5	12	21.8	30	54.5	10	18.2	55	100

OYSLB (n=83)	0	0	2	2.4	23	27.7	36	43.4	22	26.5	83	100
Total	0	0	6	2.8	43	20.1	104	48.6	61	28.5	214	100

Photocopying Machine

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	7	9.2	31	40.8	28	36.8	10	13.2	76	100
SAL (n=55)	6	10.9	12	21.8	19	34.5	17	30.9	1	1.8	55	100
OYSLB (n=83)	20	24.1	16	19.3	31	37.3	13	15.7	3	3.6	83	100
Total	26	12.1	35	16.4	81	37.9	58	27.1	14	6.5	214	100

Access to OPAC

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	1	1.3	26	34.2	43	56.6	6	7.9	76	100
SAL (n=55)	1	1.8	6	10.9	24	43.6	18	32.7	6	10.9	55	100
OYSLB (n=83)	10	12.0	6	7.2	29	34.9	29	34.9	9	10.8	83	100
Total	11	5.1	13	6.1	79	36.9	90	42.1	21	9.8	214	100

The use of Social Media

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	2	2.6	12	15.8	49	64.5	13	17.1	76	100
SAL (n=55)	0	0	0	0	15	27.3	27	49.1	13	23.6	55	100
OYSLB (n=83)	1	1.2	3	3.6	27	32.5	40	48.2	12	14.5	83	100
Total	1	0.5	5	2.3	54	25.2	116	54.2	38	17.8	214	100

Searching Library Databases

Library	N/S	%	LL	%	AL	%	HL	%	EL	%	Total	%
IOSL (n=76)	0	0	3	3.9	22	28.9	46	60.5	5	6.6	76	100
SAL (n=55)	0	0	7	12.7	28	50.9	17	30.9	3	5.5	55	100
OYSLB (n=83)	2	2.4	7	8.4	42	50.6	29	34.9	3	3.6	83	100
Total	2	0.9	17	7.9	92	43.0	92	43.0	11	5.1	214	100

Table 5.9 displays findings of each state and overall result. However, overall results are discussed. The findings presented in Table 5.8 revealed that all the patrons were skilled in the

use of desktop computers. A total of 43 (20.1 %) had an excellent level of skill; majority 111 (51.9 %) had a high level of skill; 48 (22.4 %) had an average level of skill, while 12 (5.6 %) had a low level of skill. Secondly, 29 (13.6 %) of the respondents indicated that they had an excellent level of skill on the use of laptops. A total of 100 (46.7 %) respondents had a high level of skill; 72 (33.6 %) had average level; 12 (5.6 %) had a low level, while only 1 (0.5 %) was not skilled at all. The findings also showed that 6 (2.8 %) were not skilled at all in operating scanners; 20 (9.3 %) had low skill; the majority, 114 (53.3 %) had average skill; 65 (30.4%) had high skill and 9 (4.2 %) were excellent. In addition, the use of printers recorded an average skill of 73 (34.1 %); high skill 98 (45.8 %); excellent skill 27 (12.6 %); low skill 10 (4.7 %) and 6 (2.8 %) were not skilled in operating a printer.

The findings further indicated that 77 (36 %) of respondents had an average skill in operating a projector, followed by 64 (29.9 %) who had a low skill; 16 (7.5 %) had high skill; 3 (1.4 %) had excellent skill while 54 (25.2 %) had no skill at all. Response on proficiency on the use of digital cameras revealed that majority of the patrons 116 (54.2 %) had an average level of proficiency; 66 (30.8 %) had high level; 12 (5.6 %) had excellent level; 9 (4.2 %) had low level and 11 (5.1 %) had no skill. The result also indicated that 3 (1.4 %) of respondents had no skill in the use of audiovisual equipment; 14 (6.5 %) had low skill; 17 (7.9 %) had excellent skill; 79 (36.9 %) were highly skilled and the majority, 101 (47.2 %) had average skill.

In addition, findings in Table 5.8 also showed that majority of respondents 97 (45.3 %) were not conversant with the use of barcode readers. A total of 38 (17.8 %) had low skill; 67 (31.3 %) had average skill; 10 (4.7 %) were highly skilled, while only 2 (0.9%) had an excellent level of skill. Furthermore, 60 (28 %) of respondents did not have any form of proficiency in using a fax machine. A total of 39 (18.2 %) had low skill; 96 (44.9 %) had average skill; 16 (7.5 %) had high skill and 3 (1.4 %) had an excellent proficiency in its use.

Additionally, the findings of the study revealed that respondents were highly proficient in the use of mobile phones. The majority, 110 (51.4 %) indicated a high level of proficiency; 88 (41.1 %) were excellent in its use; 16 (7.5 %) were average; none of the respondents had a low skill neither was there any that was not proficient at all. Similarly, the use of smartphones also recorded a high level of proficiency, as 115 (53.7 %) respondents were highly skilled in its use. A total of 68 (31.8 %) had an excellent level of proficiency; 28 (13.1 %) had an average level; only 3 (1.4 %) had a low level. About, 104 (48.6 %) respondents had a high level of skill on

the use of the Internet; 61 (28.5 %) had an excellent level; 43 (20.1 %) had an average level and 6 (2.8 %) had a low level of proficiency.

Concerning the use of photocopying machines for duplicating purposes, 81 (37.9 %) of library patrons had an average level of proficiency; 58 (27.1 %) were highly proficient; 14 (6.5 %) had an excellent level; 35 (16.45 %) had a low level, while 26 (12.1 %) were not skilled at all. Findings further showed that most of the respondents 90 (42.1 %) were highly skilled in accessing the libraries Online Public Access Catalogue (OPAC); 79 (36.9 %) were averagely skilled; 21 (9.8 %) had excellent skill; 13 (6.1 %) had low skill and 11 (5.1 %) were not skilled. Findings revealed that respondents were highly knowledgeable on the use of social media. A total of 116 (54.2 %) indicated that they had high proficiency; 54 (25.2 %) had an average level; 38 (17.8 %) excellent level; 5 (2.3 %) low level and just 1 (0.5 %) patron was not skilled at all. Finally, it was also revealed that patrons knew how to manoeuvre library databases. A total of 92 (43 %) indicated that they had high level; 92 (43 %) indicated average level; 17 (7.9 %) had a low level 11 (5.1 %) had an excellent level, while 2 (0.9 %) did not have any skill.

5.23   How Patrons learnt the use of ICTs in the libraries

Respondents were requested to state the means through which they acquired knowledge of ICTs. Responses of 214 respondents are reflected in Table 5.10**.**

Table 5. 10: How patrons learnt the use of ICTs in the libraries (N=248)

Library	Through assistance from fellow library patron		Through my personal efforts		Through knowledge acquired from workshops conferences and seminars		Through instruction manuals made available by manufacturers		Through the systems librarian		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
IOSL (n=76)	7	9.2	58	76.3	3	3.9	4	5.3	4	5.3	76	100
SAL (n=55)	11	20.0	38	69.1	0	0	5	9.1	1	1.8	55	100
OYSLB (n=83)	4	4.8	65	78.3	1	1.2	6	7.2	7	8.4	83	100
Total	22	10.3	161	75.2	4	1.9	15	7.0	12	5.6	214	100

Table 5.10 revealed the various means through which library patrons acquired knowledge of the use of ICTs. Based on the overall responses, it was revealed that majority 161 (75.2 %) of the respondents in all the three libraries learnt the use of ICT through their personal efforts. A total of 22 (10.3 %) learnt how to use ICT facilities through assistance from fellow library patrons. Those that learnt the use of ICTs through knowledge acquired from workshops conferences and seminars were 4 (1.9 %); 15 (7 %) acquired knowledge of ICTs through instruction manuals made available by manufacturers, while 12 (5.6 %) learnt the use of ICTs through the systems librarian of each library.

5.24   Convenience in using ICTs

Respondents were asked to indicate how convenient the use of ICTs was. The respondents were to choose from **S**/A - strongly agree; A - agree; D - disagree; SD - strongly disagree and NAD - neither agree nor disagree. The findings are presented in Table 5.11

Table 5. 11: Convenience in Using ICT (N=248)

Desktop Computers												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	40	52.6	35	46.1	1	1.3	0	0	0	0	76	100
SAL (n=55)	20	36.4	30	54.5	4	7.3	1	1.8	0	0	55	100

OYSLB (n=83)	31	37.3	48	57.8	4	4.8	0	0	0	0	83	100
Total	91	42.5	113	52.8	9	4.2	1	0.5	0	0	214	100

Laptops

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	31	40.8	44	57.9	1	1.3	0	0	0	0	76	100
SAL (n=55)	14	25.5	36	65.5	4	7.3	1	1.8	0	0	55	100
OYSLB (n=83)	27	32.5	52	62.7	3	3.6	1	1.2	0	0	83	100
Total	72	33.6	132	61.7	8	3.7	2	0.9	0	0	214	100

Scanners

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	11	14.5	63	82.9	2	2.6	0	0	0	0	76	100
SAL (n=55)	7	12.7	38	69.1	9	16.4	1	1.8	0	0	55	100
OYSLB (n=83)	5	6.0	70	84.3	4	4.8	4	4.8	0	0	83	100
Total	23	10.7	171	79.9	15	7.0	5	2.3	0	0	214	100

Projectors

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	0	0	33	43.4	31	40.8	7	9.2	5	6.6	76	100
SAL (n=55)	4	7.3	32	58.2	14	25.5	3	5.5	2	3.6	55	100
OYSLB (n=83)	0	0	31	37.3	36	43.4	13	15.7	3	3.6	83	100
Total	4	1.9	96	44.9	81	37.9	23	10.7	10	4.7	214	100

Digital Camera

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	5	6.6	66	86.8	4	5.3	0	0	1	1.3	76	100
SAL (n=55)	5	9.1	43	78.2	5	9.1	2	3.6	0	0	55	100
OYSLB (n=83)	8	9.6	68	81.9	4	4.8	3	3.6	0	0	83	100
Total	18	8.4	177	82.7	13	6.1	5	2.3	1	0.5	214	100

Printers												
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Total**	**%**
IOSL (n=76)	28	36.8	47	61.8	1	1.3	0	0	0	0	76	100
SAL (n=55)	10	18.2	39	70.9	4	7.3	2	3.6	0	0	55	100
OYSLB (n=83)	12	14.5	64	77.1	4	4.8	3	3.6	0	0	83	100
Total	50	23.4	150	70.1	9	4.2	5	2.3	0	0	214	100

Audio Visual Equipment												
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Total**	**%**
IOSL (n=76)	11	14.5	63	82.9	2	2.6	0	0	0	0	76	100
SAL (n=55)	7	12.7	41	74.5	7	12.7	0	0	0	0	55	100
OYSLB (n=83)	9	10.8	68	81.9	3	3.6	3	3.6	0	0	83	100
Total	27	12.6	172	80.4	12	5.6	3	1.4	0	0	214	100

Fax Machine												
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Total**	**%**
IOSL (n=76)	3	3.9	52	68.4	16	21.1	0	0	5	6.6	76	100
SAL (n=55)	4	7.3	29	52.7	14	25.5	7	12.7	1	1.8	55	100
OYSLB (n=83)	2	2.4	29	34.9	40	48.2	8	9.6	4	4.8	83	100
Total	9	4.2	110	51.4	70	32.7	15	7.0	10	4.7	214	100

Mobile Phone												
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Total**	**%**
IOSL (n=76)	42	55.3	34	44.7	0	0	0	0	0	0	76	100
SAL (n=55)	27	49.1	28	50.9	0	0	0	0	0	0	55	100
OYSLB (n=83)	28	33.7	53	63.9	1	1.2	1	1.2	0	0	83	100
Total	97	45.3	115	53.7	1	0.5	1	0.5	0	0	214	100

Smart Phone												
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Total**	**%**

IOSL (n=76)	40	53.3	34	45.3	1	1.3	0	0	0	0	76	100
SAL (n=55)	23	41.8	32	58.2	0	0	0	0	0	0	55	100
OYSLB (n=83)	29	34.9	52	62.7	2	2.4	0	0	0	0	83	100
Total	92	43.2	118	55.4	3	1.4	0	0	0	0	214	100

Internet

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	36	47.4	39	51.3	1	1.3	0	0	0	0	76	100
SAL (n=55)	16	29.1	36	65.5	3	5.5	0	0	0	0	55	100
OYSLB (n=83)	26	31.3	55	66.3	1	1.2	1	1.2	0	0	83	100
Total	78	36.4	130	60.7	5	2.3	1	0.5	0	0	214	100

Video Conferencing

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	12	15.8	58	76.3	6	7.9	0	0	0	0	76	100
SAL (n=55)	2	3.6	37	67.3	13	23.6	3	5.5	0	0	55	100
OYSLB (n=83)	3	3.6	30	36.1	37	44.6	8	9.6	5	6.0	83	100
Total	17	7.9	125	58.4	56	26.2	11	5.1	5	2.3	214	100

Photocopying Machine

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	12	15.8	63	82.9	1	1.3	0	0	0	0	76	100
SAL (n=55)	7	12.7	32	58.2	15	27.3	1	1.8	0	0	55	100
OYSLB (n=83)	3	3.6	46	55.4	26	31.3	5	6.0	3	3.6	83	100
Total	22	10.3	141	65.9	42	19.6	6	2.8	3	1.4	214	100

Findings presented in Table 5.11 above shows that 91 (42.5 %) of respondents strongly agreed that they found it convenient to use desktop computers. A total of 113 (52.8 %) agreed; 9 (4.2 %) disagreed, while 1 (0.5 %) strongly disagreed. The use of laptops had 72 (33.6 %)

respondents who strongly agreed that its use was convenient. Next were those who agreed, they were 132 (61.7 %); followed by 8 (3.7 %) who disagreed and 2 (0.9 %) strongly disagreed. Findings also showed that 23 (20.7 %) of respondents strongly agreed that it was convenient for them to use scanners. This showed that they were highly competent in its use. However, 171 (79.9 %) agreed; 15 (7.0 %) disagreed; while 5 (2.3 %) strongly disagreed. Likewise, analysis of findings revealed that only 4 (1.9 %) strongly agreed that the use of projectors was convenient. A total of 96 (44.9 %) agreed; 81 (37.9 %) disagreed; 23 (10.7 %) strongly disagreed and 10 (4.7 %) neither agreed nor disagreed.

Similarly, findings showed that 18 (8.4 %) strongly agreed that it was convenient to use digital cameras. Majority, 177 (82.7 %) agreed; 13 (6.1 %) disagreed; 5 (2.3 %) strongly disagreed and only 1 (0.5 %) neither agreed nor disagreed. In addition, 50 (23.4 %) of respondents strongly agreed that the use of printers was convenient. More than half 150 (70.1 %) agreed; 9 (4.2 %) disagreed and 5 (2.3 %) strongly disagreed. The use of audio-visual equipment had 27 (12.6 %) of respondents who strongly agreed that it was convenient to use them. A larger number 172 (80.4 %) agreed; 12 (5.6 %) disagreed, while 3 (1.4 %) strongly disagreed. Additionally, only a few respondents 9 (4.2 %) strongly agreed that the use of fax machine was convenient. A total of 110 (51.4 %) agreed; 70 (32.7 %) disagreed, while 10 (4.7 %) neither agreed nor disagreed.

Furthermore, findings revealed that library patrons found the use of mobile phone convenient. A total of 97 (45.3 %) strongly agreed; 115 (53.7 %) agreed; only 1 (0.5 %) disagreed and 1 (0.5 %) strongly disagreed. Similarly, 92 (43.2 %) strongly agreed that it was convenient to use smartphones. Those who agreed were 118 (55.4 %). Only 3 (1.4 %) disagreed. Also, 78 (36.4 %) strongly agreed that the use of the Internet was convenient. A total of 130 (60.7 %) indicated that they agreed; 5 (2.3 %) disagreed, while only 1 (0.5 %) strongly disagreed. Moreover, 17 (7.9 %) strongly agreed on the convenience of using video conferencing facilities. A total of 125 (58.4 %) agreed; 56 (26.2 %) disagreed; 11 (5.1 %) strongly disagreed while 5 (2.3 %) neither agreed nor disagreed. Lastly, 22 (10.3 %) respondents indicated that they strongly agreed on the convenience of using photocopying machine. Those who indicated that they agreed were 141 (65.9 %); 42 (19.6 %) disagreed; 6 (2.8 %) strongly disagreed and 3 (1.4 %) neither agreed nor disagreed.

5.25   Vital ICT skills

The study sought to find out in the third research question, vital skills respondents required in order to effectively utilise automated systems in the library. The respondents were to choose from S/A-strongly agree; A- agree; D- disagree; SD - strongly disagree and NAD - neither agree nor disagree. The findings from 214 participants are presented in Table 5.12.

Table 5. 12: Vital ICT skills (N=248)

The Use of Internet														
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	57	75.0	19	25.0	0	0	0	0	0	0	0	0	76	100
SAL (n=55)	33	60	22	40	0	0	0	0	0	0	0	0	55	100
OYSLB (n=83)	35	42.2	48	57.8	0	0	0	0	0	0	0	0	83	100
N= Total	125	58.4	89	41.6	0	0	0	0	0	0	0	0%	214	100
The use of Social Media														
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	26	34.2	26	34.2	13	17.1	0	0	11	14.5	0	0	76	100
SAL (n=55)	15	27.3	28	50.9	8	14.5	1	1.8	3	5.5	0	0	55	100
OYSLB (n=83)	15	18.1	49	59.0	18	21.7	0	0	1	1.2	0	0	83	100
Total	56	26.2	103	48.1	39	18.2	1	0.5	15	7.0	0	0	214	100
Word Processing														
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	42	55.3	26	34.2	1	1.3	0	0	7	9.2	0	0	76	100
SAL (n=55)	10	18.2	37	67.3	5	9.1	0	0	3	5.5	0	0	55	100
OYSLB (n=83)	12	14.5	67	80.7	4	4.8	0	0	0	0	0	0	83	100
Total	64	29.9	130	60.7	10	4.7	0	0	10	4.7	0	0	214	100
The Use of Microsoft Excel														
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%

IOSL (n=76)	31	40.8	33	43.4	2	2.6	0	0	10	13.2	0	0	76	100
SAL (n=55)	11	20.0	35	63.6	6	10.9	0	0	3	5.5	0	0	55	100
OYSLB (n=83)	5	6.0	68	81.9	10	12.0	0	0	0	0	0	0	83	100
Total	47	22.0	136	63.6	18	8.4	0	0	13	6.1	0	0	214	100

The Use of E-mail

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	44	57.9	25	32.9	1	1.3	0	0	6	7.9	0	0	76	100
SAL (n=55)	26	47.3	27	49.1	0	0	0	0	2	3.6	0	0	55	100
OYSLB (n=83)	21	25.3	59	71.1	3	3.6	0	0	0	0	0	0	83	100
Total	91	42.5	111	51.9	4	1.9	0	0	8	3.7	0	0	214	100

Programming

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	5	6.6	18	23.7	31	40.8	9	11.8	13	17.1	0	0	76	100
SAL (n=55)	2	3.6	7	12.7	27	49.1	10	18.2	9	16.4	0	0	55	100
OYSLB (n=83)	0	0	6	7.2	55	66.3	15	18.1	7	8.4	0	0	83	100
Total	7	3.3	31	14.5	113	52.8	34	15.9	29	13.6	0	0	214	100

Knowledge of Computer Hardware

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	18	23.6	37	48.6	11	14.4	0	0	9	11.8	1	1.3	76	100
SAL (n=55)	7	12.7	30	54.5	12	21.8	2	3.6	3	5.5	1	1.8	55	100
OYSLB (n=83)	7	8.4	67	80.7	6	7.2	1	1.2	2	2.4	0	0	83	100
Total	32	15	134	63	29	13.5	3	1.4	14	6.5	2	0.9	214	100

The Use of Smart Phones

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	26	34	34	45	4	5.3	1	1.3	10	13	1	1.3	76	100
SAL (n=55)	8	14.5	28	50.9	16	29.1	0	0	3	5.5	0	0	55	100

OYSLB (n=83)	5	6.0	55	66.3	20	24.1	1	1.2	2	2.4	0	0	83	100
Total	39	18.2	117	54.6	40	18.6	2	0.9	15	7.0	1	0.4	214	100

The Use of PowerPoint

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	27	35.5	35	46	6	87.9	0	0	7	9.2	1	1.3	76	100
SAL (n=55)	6	10.9	27	49.1	18	32.7	0	0	4	7.3	0	0	55	100
OYSLB (n=83)	8	9.6	55	66.3	15	18.1	0	0	5	6.0	0	0	83	100
Total	41	19	117	55	39	18	0	0	16	7.5	1	0.5	214	100

The Use of Open Access Catalogue (OPAC)

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	34	44.7	37	48.7	0	0	0	0	5	6.6	0	0	76	100
SAL (n=55)	19	34.5	31	56.4	3	5.5	0	0	2	3.6	0	0	55	100
OYSLB (n=83)	21	25.3	59	71.1	0	0	1	1.2	2	2.4	0	0	83	100
Total	74	34.6	127	59.3	3	1.4	1	0.5	9	4.2	0	0	214	100

Access to Databases

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	38	50.0	33	43.4	0	0	0	0	5	6.6	0	0	76	100
SAL (n=55)	17	30.9	34	61.8	2	3.6	0	0	2	3.6	0	0	55	100
OYSLB (n=83)	19	22.9	61	73.5	0	0	1	1.2	2	2.4	0	0	83	100
Total	74	34.6	128	59.8	2	0.9	1	0.5	9	4.2	0	0	214	100

Findings revealed that majority of library patrons 125 (58.4 %) strongly agreed that it was vital to know how to access the Internet. Those who agreed were 89 (41.6 %). None of the respondents disagreed, neither was there any that indicated strongly disagreed. These findings suggest the importance they attached to having good knowledge of accessing the Internet. In addition, 56 (26.2 %) strongly agreed that it was vital to know how to use social media. A total of 103 (48.1 %) agreed; 39 (18.2 %) disagreed; 1 (0.5 %) strongly disagreed, while 15 (7.0 %) neither agreed nor disagreed. For word processing, 64 (29.9 %) strongly agreed that it was an

important skill that a library patron should possess. Those who agreed were 130 (60.7 %); 10 (4.7 %) disagreed and 10 (4.7 %) neither agreed nor disagreed.

Moreover, the use of email had 91 (42.5 %) respondents who strongly agreed it was a vital skill. Another 111 (51.9 %) agreed; 4 (1.9 %) disagreed that it was not important, while 8 (3.7 %) neither agreed nor disagreed. In addition, 47 (22 %) respondents strongly agreed that the use of Microsoft Excel was an important skill. Findings revealed that majority 136 (63.6 %) agreed; 18 (8.4 %) disagreed, while 13 (6.1 %) neither agreed nor disagreed. Findings further showed that only 7 (3.3 %) respondents strongly agreed that programming is a vital skill. Those who agreed were 31 (14.5 %); the majority, 113 (52.8 %) disagreed; 34 (15.9 %) strongly disagreed, while 29 (13.6 %) neither agreed nor disagreed. It is evident from the findings that programming was not as important to the patrons as other skills are.

Furthermore, 32 (15 %) of the respondents strongly agreed that they had a good knowledge of computer hardware. Majority 134 (63 %) agreed; 29 (13.5 %) disagreed; 3 (1.4 %) strongly disagreed; 14 (6.5 %) neither agreed nor disagreed, while 2 (0.9 %) did not respond. The use of smartphones had 39 (18.2 %) respondents who strongly agreed that it was an essential skill. A total of 117 (54.6 %) agreed; 40 (18.6 %) disagreed; only 2 (0.9 %) strongly disagreed; 15 (7.0 %) neither agreed nor disagreed, while 1 (0.4 %) did not respond. Findings also revealed that 41 (19 %) of respondents strongly agreed that power point use was a vital skill. Those who agreed were 177 (55 %); 39 (18 %) disagreed; 16 (7.5 %) neither agreed nor disagreed and 1 (0.5 %) never responded. Findings revealed that respondents had a good knowledge of the OPAC. A total of 74 (34.6 %) strongly agreed that it was a relevant skill. Majority 127 (59.3 %) agreed, 3 (1.4 %) disagreed; 1 (0.5 %) strongly disagreed, while 9 (4.2 %) neither agreed nor disagreed. Finally, 74 (34.6 %) strongly agreed that skilfulness in accessing databases was vital. A total of 128 (59.8 %) agreed; 2 (0.9 %) disagreed; 1 (0.5 %) strongly disagreed and 9 (4.2 %) neither agreed nor disagreed.

5.26   Frequency of library training

Respondents were asked to indicate the training programs that were available to them and the frequency of training they received. The findings from 214 participants are presented in Table 5.13.

Table 5. 13: Frequency of Library Training (N=248)

The Use of Internet										
Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	42	55.3	33	44.4	1	1.3	76	100
SAL (n=55)	0	0	0	0	55	100	0	0	55	100
OYSLB (n=83)	0	0	27	32.5	56	67.5	0	0	83	100
Total	0	0	69	32.2	144	67.3	1	0.5	214	100
The Use of Social Media										
Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	7	9.2	68	89.5	1	1.3	76	100
SAL (n=55)	0	0	2	3.6	53	96.4	0	0	55	100
OYSLB (n=83)	0	0	0	0	83	100	0	0	83	100
Total	0	0	9	4.2	204	95.3	1	0.5	214	100
Word Processing										
Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	12	15.8	63	82.8	1	1.3	76	100
SAL (n=55)	0	0	6	10.9	49	89.1	0	0	55	100
OYSLB (n=83)	0	0	11	13.3	72	86.7	0	0	83	100
Total	0	0	29	13.6	184	85.9	1	0.5	214	100
The Use of Microsoft Excel										
Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	4	5.3	71	93.4	1	1.3	76	100
SAL (n=55)	0	0	1	1.8	54	98.2	0	0	55	100
OYSLB (n=83)	0	0	3	3.6	80	96.4	0	0	83	100
Total	0	0	8	3.7	205	95.7	1	0.5	214	100
The Use of E-mail										

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	24	31.6	52	68.4	0	0	76	100
SAL (n=55)	0	0	5	9.1	50	90.9	0	0	55	100
OYSLB (n=83)	0	0	10	12.0	73	88.0	0	0	83	100
Total	0	0	39	18.2	175	81.8	0	0	214	100

Programming

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	4	5.3	71	93.4	1	1.3	76	100
SAL (n=55)	0	0	0	0	55	100	0	0	55	100
OYSLB (n=83)	0	0	5	6.0	78	94.0	0	0	83	100
Total	0	0	9	4.2	204	95.3	1	0.5	214	100

Knowledge of Computer Hardware

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	24	31.5	51	67.1	1	1.3	76	100
SAL (n=55)	0	0	19	34.5	36	65.5	0	0	55	100
OYSLB (n=83)	0	0	37	44.6	46	55.4	0	0	83	100
Total	0	0	80	37.4	133	62.1	1	0.5	214	100

The Use of Smart Phones

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	4	5.3	71	93.4	1	1.3	76	100
SAL (n=55)	0	0	0	0	55	100	0	0	55	100
OYSLB (n=83)	0	0	0	0	83	100	0	0	83	100
Total	0	0	4	1.9	209	97.6 %	1	0.5	214	100

The Use of PowerPoint

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%

IOSL (n=76)	0	0	0	0	75	100	1	1.3	76	100
SAL (n=55)	0	0	2	3.6	53	96.4	0	0	55	100
OYSLB (n=83)	0	0	2	2.4	81	97.6	0	0	83	100
Total	0	0	4	1.9	209	97.6	1	0.5	214	100

The Use of Online Public Access Catalogue (OPAC)

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	64	84.2	12	15.8	0	0	76	100
SAL (n=55)	0	0	29	52.7	26	47.3	0	0	55	100
OYSLB (n=83)	0	0	45	54.2	38	45.8	0	0	83	100
Total	0	0	138	64.5	76	35.5	0	0	214	100

Access to Databases

Library	Monthly	%	Rarely	%	Never	%	Non Resp	%	Total	%
IOSL (n=76)	0	0	69	90.8	7	9.2	0	0	76	100
SAL (n=55)	0	0	12	21.8	43	78.2	0	0	55	100
OYSLB (n=83)	0	0	45	54.2	38	45.8	0	0	83	100
Total	0	0	126	58.9	88	41.1	0	0	214	100

Findings presented in Table 5.13 revealed that training programs in the libraries studied were not regular. A total of 69 (32.2 %) indicated that training on the use of Internet services was very rare, while 144 (67.3 %) indicated that it was never done; 1 (0.5 %) did not respond. In addition, 9 (4.2 %) of respondents indicated that training on the use of social media was rarely done. The other group of respondents that were the majority, 204 (95.3 %) indicated that they never had any form of training and 1 (0.5 %) never responded. On the use of word processing, 29(13.6 %) responded that they rarely received training; 184 (85.9 %) were never trained in this area, while 1 (0.5 %) never responded.

Similarly, 8 (3.7 %) respondents indicated they rarely received training on the use of Microsoft excel; 205 (95.7 %) never received training, while 1 (0.5 %) did not respond. Training on the use of email was also not common as 39 (18.2 %) rarely received training, while 175 (81.8 %)

never received any form of training. Also, on the use of computer hardware, 80 (37.4 %) indicated that although training was provided in this area, it was rare. A total of 133 (62.1 %) admitted that training never took place and 1 (0.5 %) never responded. Only 4 (1.9 %) respondents indicated that they received training on the use of smartphones as well as power point, while 209 (97.6 %) never did; 1 (0.5 %) did not respond to smartphone and power point.

The use of OPAC had more respondents 138 (64.5 %) agreeing to the fact that training was done but on a rare basis. A total of 76 (35.5 %) never did. Lastly, training on the use of databases had 126 (58.9 %) who indicated that it was rarely done and 88 (41.1 %) responded that it was never done. Further enquiries during the focus group discussion revealed that training was part of the library activities but the paucity of fund led to its irregularity.

5.27   Factors influencing adoption and use of automated systems

The study sought to determine factors that influenced the adoption and use of automated systems by librarians and patrons of public libraries in South West Nigeria. This was in an attempt to address the second research question of this study based on UTAUT model. These factors were measured using the following constructs: performance expectancy; effort expectancy; social influence and facilitating conditions. Performance expectancy is the degree to which an individual believes that using a system will enhance performance on a job (Venkatesh *et al.*, 2003). Effort Expectancy is the degree of ease associated with the use of the system (Venkatesh *et al.*, 2003). Social Influence is the individual's perception that a person who is important to him/her thinks s/he should use the system (Venkatesh *et al.*, 2003). Facilitating conditions is the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system (Venkatesh *et al.*, 2003).

5.27.1 Performance expectancy

Respondents were requested to state how performance expectancy influenced their use of the library on a scale of S/A-strongly to agree; A- agree; D- disagree; SD- strongly disagree and NAD- neither agree nor disagree. The findings from 214 respondents are presented in Table 5.14.

Table 5. 14: Performance expectancy (N=248)

Performance Expectancy: Automated systems are useful in retrieving information materials.													
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Non Resp**	**%**	**Total**	**%**
IOSL (n=76)	54	71	20	26.3	0	0	1	1.3	0	0	1	1.3	76	100
SAL (n=55)	24	43.6	29	52.7	0	0	0	0	1	1.8	1	1.8	55	100
OYSLB (n=83)	40	48.2	42	50.6	0	0	0	0	1	1.2	0	0	83	100
Total	118	55.1	91	42.5	0	0	1	0.5	2	0.9	2	0.9	214	100
Performance Expectancy: The use of automated systems aids in accessing information materials faster													
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Non Resp**	**%**	**Total**	**%**
IOSL (n=76)	52	69.3	22	29.3	1	1.3	0	0	0	0	1	1.3	76	100
SAL (n=55)	26	47.3	25	45.5	3	5.5	0	0	1	1.8	0	0	55	100
OYSLB (n=83)	43	51.8	39	47.0	0	0	0	0	1	1.2	0	0	83	100
Total	121	56.5	86	40.1	4	1.9	0	0	2	0.9	1	0.5	214	100
Performance Expectancy: The use of ICTs enables me to carry out research effectively													
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Non Resp**	**%**	**Total**	**%**
IOSL (n=76)	57	75.0	17	22.4	2	2.6	0	0	0	0	0	0	76	100
SAL (n=55)	27	49.1	24	43.6	3	5.5	0	0	1	1.8	0	0	55	100
OYSLB (n=83)	33	39.8	48	57.8	1	1.2	0	0	1	1.2	0	0	83	100
Total	117	54.7	89	41.6	6	2.8	0	0	2	0.9	0	0	214	100
Performance Expectancy: The use of ICTs keeps me updated on new trends in my discipline													
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Non Resp**	**%**	**Total**	**%**
IOSL (n=76)	51	67.1	19	25.0	4	5.3	0	0	2	2.6	0	0	76	100
SAL (n=55)	23	41.8	25	45.5	4	7.3	2	3.6	1	1.8	0	0	55	100
OYSLB (n=83)	29	34.9	43	51.8	5	6.0	0	0	6	7.2	0	0	83	100
Total	103	48.1	87	40.7	13	6.1	2	0.9	9	4.2	0	0	214	100
Performance Expectancy: The use of automated systems increases my productivity													
Library	**S/A**	**%**	**A**	**%**	**D**	**%**	**SD**	**%**	**NAD**	**%**	**Non Resp**	**%**	**Total**	**%**

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	51	67	18	24	3	3.9	0	0	3	3.9	1	1.3	76	100
SAL (n=55)	19	34.5	29	52.7	5	9.1	1	1.8	1	1.8	0	0	55	100
OYSLB (n=83)	27	32.5	53	63.9	3	3.6	0	0	0	0	0	0	83	100
Total	97	45.3	100	46.7	11	5.1	1	0.5	4	1.9	1	0.5	214	100

Performance Expectancy: The use of ICTs make my studies more interesting

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	50	65.7	21	28	1	1.3	1	1.3	1	1.3	2	2.6	76	100
SAL (n=55)	19	34.5	30	54.5	3	5.5	0	0	3	5.5	0	0	55	100
OYSLB (n=83)	27	32.5	50	60.2	5	6.0	0	0	1	1.2	0	0	83	100
Total	96	45	101	47	9	4.2	1	0.4	5	2.3	2	0.9	214	100

Performance Expectancy: The application of ICTs improve the quality of library services I enjoy

Library	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	34	44.7	29	38.1	8	10.5	3	3.9	1	1.3	1	1.3	76	100
SAL (n=55)	9	16.4	28	50.9	10	18.2	2	3.6	6	10.9	0	0	55	100
OYSLB (n=83)	19	22.9	51	61.4	8	9.6	3	3.6	2	2.4	0	0	83	100
Total	62	28.9	108	50.5	26	12.1	8	3.7	9	4.2	1	0.5	214	100

Responses of library patrons on whether performance expectancy influenced their use of automated systems indicated that 118 (55.1 %) strongly agreed that automated systems are useful in retrieving information materials from the public library. A total of 91 (42.5 %) agreed; 1 (0.5 %) strongly disagreed; 2 (0.9 %) neither agreed nor disagreed and 2 (0.9 %) did not respond. In addition, 121 (56.5 %) strongly agreed that the use of automated systems aided faster access to information materials. A total of 86 (40.1 %) agreed; 4 (1.9 %) disagreed; 2 (0.9 %) neither agreed nor disagreed and 1 (0.5 %) did not respond. Similarly, 117 (54.7 %) strongly agreed that the use of ICTs enabled them to carry out research effectively. A total of 89 (41.6 %) agreed; 6 (2.8 %) disagreed, while 2 (0.9 %) neither agreed nor disagreed.

Furthermore, respondents were asked if the use of ICTs kept them updated on new trends in their discipline or not. Majority, 103 (48.1 %) strongly agreed; 87 (40.7 %) agreed; 13 (6.1 %) disagreed; 2 (0.9 %) strongly disagreed, while 9 (4.7 %) neither agreed nor disagreed. Findings

further showed that 97 (45.3 %) strongly agreed that the use of automated systems increased their productivity. A total of 100 (46.7 %) agreed; 11 (5.1 %) disagreed; 1 (0.5 %) strongly disagreed; 4 (1.9 %) neither agreed nor disagreed, while 1 (0.5 %) did not respond. The findings further revealed that 96 (45 %) of respondents strongly agreed that the use of ICTs made studies more interesting. A total of 101 (47 %) agreed; 9 (4.2 %) disagreed; 1 (0.4 %) strongly disagreed; 5 (2.3 %) neither agreed nor disagreed and 2 (0.9 %) did not respond. Finally, respondents were requested to indicate if the use of ICTs improved the quality of library services. A total of 62 (28.9 %) strongly agreed; 108 (50.5 %) agreed; 26 (12.1 %) disagreed; 8 (3.7 %) strongly disagreed; 9 (4.2 %) neither agreed nor disagreed, while 1 (0.5 %) did not respond to the question.

5.27.2 Effort expectancy

Respondents were asked to state how effort expectancy influenced their adoption and use of technology. S/A -strongly agree; A -agree; D-disagree; SD - strongly disagree and NAD - neither agree nor disagree. Responses from 214 patrons are presented in Table 5.15.

Table 5. 15: Effort expectancy (N=248)

Effort Expectancy: It is easy to interact with ICTs such as computers and printers												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	47	61.8	23	30.3	2	2.6	2	2.6	2	2.6	76	100
SAL (n=55)	25	45.5	25	45.5	3	5.5	1	1.8	1	1.8	55	100
OYSLB (n=83)	18	21.7	57	68.7	7	8.4	1	1.2	0	0	83	100
Total	90	42.1	105	49.1	12	5.6	4	1.9	3	1.4	214	100
Effort Expectancy: It is easy doing my assignments by application of ICTs												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	45	59.2	29	38.2	1	1.3	1	1.3	0	0	76	100
SAL (n=55)	18	32.7	31	56.4	4	7.3	0	0	2	3.6	55	100
OYSLB (n=83)	17	20.5	58	69.9	7	8.4	1	1.2	0	0	83	100
Total	80	37.4	118	55.1	12	5.6	2	0.9	2	0.9	214	100
Effort Expectancy: The use of Internet, websites, emailing is very easy												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%

	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	49	64.5	21	27.6	4	5.3	2	2.6	0	0	76	100
SAL (n=55)	15	27.3	33	60.0	4	7.3	0	0	3	5.5	55	100
OYSLB (n=83)	15	18.1	58	69.9	8	9.6	0	0	2	2.4	83	100
Total	79	36.9	112	52.3	16	7.5	2	0.9	5	2.3	214	100
Effort Expectancy: The use of ICTs require specialised skill												
Library	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	21	27.6	29	38.2	17	22.4	6	7.9	3	3.9	76	100
SAL (n=55)	20	36.4	26	47.3	4	7.3	2	3.6	3	5.5	55	100
OYSLB (n=83)	25	30.1	58	69.9	0	0	0	0	0	0	83	100
Total	66	30.8	113	52.8	21	9.8	8	3.7	6	2.8	214	100

The findings revealed that participants found it easy to interact with some basic ICTs. A good number 90 (42.1 %) strongly agreed; 105 (49.1 %) agreed; 12 (5.6 %) disagreed; 4 (1.9 %) strongly disagreed and 3 (1.4 %) neither agreed nor disagreed. In addition, 80 (37.4 %) strongly agreed that the application of ICTs for assignments was quite easy; 118 (55.1 %) agreed; 12 (5.6 %) disagreed; 2 (0.9 %) strongly disagreed and 2 (0.9 %) neither agreed nor disagreed. Similarly, 79 (36.9 %) strongly agreed that the use of the Internet was easy; 112 (52.3 %) agreed; 16 (7.5 %) disagreed; 2 (0.9 %) strongly disagreed, while 5 (2.3 %) neither agreed nor disagreed. Finally, respondents were asked to indicate if the use of ICTs required specialised skills or not. Those who strongly agreed were 66 (30.8 %). A total of 113 (0.8 %) agreed; 21 (9.8 %) disagreed; 8 (3.7 %) strongly disagreed, while 6 (2.8 %) neither agreed nor disagreed.

5.27.3 Social influence

An investigation into how social influence affects the adoption and use of technology was carried out. Respondents were required to choose from S/A-strongly agree; A -agree; D-disagree; SD- strongly disagree and NAD- neither agree nor disagree. The findings from 214 patrons are presented in Table 5.16 below.

Table 5.16: Social influence (N=248)

Social Influence: Persons who are significant to me believe that I should use ICTs														
	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL n=76)	24	31.5	31	40.7	7	9.2	8	10.5	5	6.57	1	1.3	76	100
SAL (n=55)	18	32.7	26	47.3	8	14.5	1	1.8	2	3.6	0	0	55	100
OYSLB (n=83)	27	32.5	54	65.1	2	2.4	0	0	0	0	0	0	83	100
Total	69	32.2	111	52	17	8	9	4.2	7	3.2	1	0.4	214	100
Social Influence: My colleagues in the library have been supportive in my us of ICTs														
	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	16	21.1	30	39.5	16	21.1	9	11.8	5	6.6	0	0	76	100
SAL (n=55)	11	20.0	29	52.7	7	12.7	3	5.5	5	9.1	0	0	55	100
OYSLB (n=83)	15	18.1	59	71.1	9	10.8	0	0	0	0	0	0	83	100
Total	42	19.6	118	55.1	32	15.0	12	5.6	10	4.7	0	0	214	100
Social Influence: In general, the library management supports my use of ICTs														
	S/A	%	A	%	D	%	SD	%	NAD	%	Non Resp	%	Total	%
IOSL (n=76)	19	25.0	22	28.9	17	22.4	13	17.1	5	6.6	0	0	76	100
SAL (n=55)	9	16.4	23	41.8	15	27.3	2	3.6	6	10.9	0	0	55	100
OYSLB (n=83)	9	10.8	68	81.9	4	4.8	0	0	2	2.4	0	0	83	100
Total	37	17.3	113	52.8	36	16.8	15	7.0	13	6.1	0	0	214	100

The findings presented above showed that overall, 69 (32.2 %) respondents strongly agreed that persons who are significant to them believed that they should use ICTs. A total of 111 (52 %) agreed; 17 (8 %) disagreed; 9 (4.2 %) strongly disagreed; 7 (3.2 %) neither agreed nor disagreed, while 1 (0.4 %) did not respond. Furthermore, 42 (19.6 %) strongly agreed that colleagues in the library have been supportive in their use of ICTs. A larger group 118 (55.1 %) agreed; 32 (15 %) disagreed; 12 (5.6 %) strongly disagreed and 10 (4.7 %) neither agreed nor disagreed. Moreover, 37 (17.3 %) of respondents strongly agreed that the library

management was in full support of their use of ICTs. A total of 113 (52.8 %) agreed; 36 (16.8 %) disagreed; 15 (7 %) strongly disagreed, while 13 (6.1 %) neither agreed nor disagreed.

5.27.4 Facilitating conditions

An enquiry into how facilitating conditions influenced adoption and use of technology was done. Respondents were required to choose from **S**/A-strongly agree; A-agree; D- disagree; SD- strongly disagree and NAD- neither agree nor disagree. The findings from 214 patrons are presented in Table 5.17.

Table 5. 17: Facilitating conditions (N=248)

Facilitating Conditions: I Have the Resources that are Required to Use ICTs												
	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	23	30.3	30	39.5	16	21.1	5	6.6	2	2.6	76	100
SAL (n=55)	17	30.9	26	47.3	7	12.7	4	7.3	1	1.8	55	100
OYSLB (n=83)	15	18.1	55	66.3	10	12.0	3	3.6	0	0	83	100
Total	55	25.7	111	51.9	33	15.4	12	5.6	3	1.4	214	100
Facilitating Conditions: The systems librarian is always available for assistance with difficulties in using ICTs												
	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	10	13.2	26	34.2	15	19.7	18	23.7	7	9.2	76	100
SAL (n=55)	5	9.1	25	45.5	14	25.5	3	5.5	8	14.5	55	100
OYSLB (n=83)	11	13.3	62	74.7	8	9.6	2	2.4	0	0	83	100
Total	26	12.1	113	52.8	37	17.3	23	10.7	15	7.0	214	100
Facilitating Conditions: I have the knowledge required to use ICTs												
	S/A	%	A	%	D	%	SD	%	NAD	%	Total	%
IOSL (n=76)	35	46.1	36	47.4	2	2.6	2	2.6	1	1.3	76	100
SAL (n=55)	21	38.2	30	54.5	4	7.3	0	0	0	0	55	100
OYSLB (n=83)	15	18.1	60	72.3	6	7.2	2	2.4	0	0	83	100
Total	71	33.2	126	58.9	12	5.6	4	1.9	1	0.5	214	100

The findings presented in Table 5.17 revealed that overall, 55 (25.7 %) of respondents strongly agreed that they have the resources required to use ICTs. A total of 111 (51.9 %) from the

majority agreed; 33 (15.4 %) disagreed; 12 (5.6 %) strongly disagreed, while 3 (1.4 %) neither agreed nor disagreed. Similarly, 71 (33.2 %) indicated that they strongly agreed that they had the required knowledge to use ICTs. Majority, 126 (58.9 %) agreed; 12 (5.6 %) disagreed; 4 (1.9 %) strongly disagreed and 1 (0.5 %) neither agreed nor disagreed.

Additionally, 26 (12.1 %) strongly agreed that the systems librarian was always available to help with difficulties they encountered in the use of ICTs. Majority, 113 (52.8 %) agreed; 37 (17.3 %) disagreed; 23 (10.7 %) strongly disagreed, while 15 (7.0 %) neither agreed nor disagreed.

5.28 Challenges that public library patrons experience in the use automated systems

The study sought to find out through the fourth research question the challenges public libraries experience in the adoption of ICTs. Respondents were asked to state the challenges they encountered in the adoption of automated systems. The findings from 214 patrons are presented in Table 5.18 below.

Table 5. 18: Challenges of using ICTS (N=248)

Challenges of Using ICTs								
Inadequate funding								
Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	75	98.7	1	1.3	0	0	76	100
SAL (n=55)	55	100	0	0	0	0	55	100
OYSLB (n=83)	83	100	0	0	0	0	83	100
Total	213	99.5	1	0.5	0	0	214	100
Lack of technical skills								
Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	51	67.1	25	32.9	0	0	76	100
SAL (n=55)	36	65.5	19	34.5	0	0	55	100
OYSLB (n=83))	64	77.1	19	22.9	0	0	83	100
Total	151	70.6	63	29.4	0	0	214	100
Absence of training programme								
Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	62	81.6	14	18.4	0	0	76	100
SAL (n=55)	50	90.9	5	9.1	0	0	55	100

OYSLB (n=83)	83	100	0	0	0	0	83	100
Total	195	91.1	19	8.9	0	0	214	100

Negative attitude towards automation

Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	42	55.3	34	44.7	0	0	76	100
SAL (n=55)	36	65.5	19	34.5	0	0	55	100
OYSLB (n=83)	48	57.8	35	42.2	0	0	83	100
Total	126	58.9	88	41.1	0	0	214	100

Erratic power supply (N=214)

Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	65	85.5	11	14.5	0	0	76	100
SAL (n=55)	52	94.5	3	5.5	0	0	55	100
OYSLB (n=83)	83	100	0	0	0	0	83	100
Total	200	93.5	14	6.5	0	0	214	100

Unsatisfactory library software

Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	42	55.3	34	44.7	0	0	76	100
SAL (n=55)	27	49.1	28	50.9	0	0	55	100
OYSLB (n=83)	21	25.3	62	74.7	0	0	83	100
Total	90	42.1	124	57.9	0	0	214	100

Inadequate ICT infrastructure

Library	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	61	80.3	15	19.7	0	0	76	100
SAL (n=55)	50	90.9	5	9.1	0	0	55	100
OYSLB (n=83)	83	100	0	0	0	0	83	100
Total	194	90.7	20	9.3	0	0	214	100

Lack of commitment from the management

	YES	%	NO	%	Non Resp.	%	TOTAL	%
IOSL (n=76)	47	61.8	28	36.8	1	1.3	76	100
SAL (n=55)	32	58.2	23	41.8	0	0	55	100
OYSLB (n=83)	25	30.1	57	68.6	1	1.2	83	100
Total	104	48.5	108	50.4	2	0.9	214	100

The findings showed that overall, 213 (99.5 %) respondents indicated that inadequate funding was the major challenge public libraries were facing in the adoption of automated systems. This was followed by erratic power supply of which 200 (93.5 %) respondents said it was a major challenge. Another challenge the public libraries were encountering was the absence of training programs. It was revealed that 195 (91.1 %) of the respondents indicated that they lacked access to training programs. Next to this was inadequate ICT infrastructure which 194 (90.7 %) respondents noted it was a challenge. A total of 151 (70.6 %) respondents stated that lack of technical skills was a challenge in the adoption of ICTs; 126 (58.9 %) selected negative attitude towards automation, while 104 (48.5 %) respondents opted for lack of commitment from the management. Unsatisfactory library software was the least popular among the challenges of adopting automated systems with 90 (42.1 %) respondents.

5.29   Summary

This Chapter presented the findings from the data collected using the survey questionnaires and focus group discussion schedule. The questionnaire covered, response rate, demographic details such as gender, age, highest educational qualification, duration of being a library patron, designation of librarians and years of experience. In addition, findings were presented on ICT facilities that were available in the library, frequency of use of ICTs, services that were automated, the extent of automation, convenience in using ICTs, skill and proficiency in the use of ICTs. The other aspects on which findings were presented included how the knowledge of ICT was acquired; availability of training programs and frequency of training; factors that influence the adoption and use of ICTs; challenges of using ICTs; and how such challenges could be overcome.

CHAPTER SIX

DISCUSSION OF FINDINGS

6.1   Introduction

The purpose of this study was to investigate the extent of automation of public libraries in South West Nigeria. The population of the study consists of patrons and professionals and para-professional librarians in selected public libraries in South West Nigeria. The Unified Theory of Acceptance and Use of Technology (UTAUT), was used to underpin the study.

 The following research questions were addressed:

1. What is the level of public library automation in South West Nigeria?
2. What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria?
3. What are the skills and competencies that librarians and patrons possess to effectively use ICTs?
4. What challenges do librarians and patrons experience in managing automated library systems?

Ofulla (2013) describes discussion of findings as a means through which the concepts that were examined and were observed by a researcher in the course of the study can be better understood; it also provides a theoretical conception that can serve as a guide for further researchers. He further explained that discussion of findings in research is vital because the usefulness and utility of research findings lie in the proper interpretation of results. Likewise, Daniel and Aroma (2011) defined discussion of findings as the task of drawing inferences from data that was collected after an analytical and/or experimental study. They added that interpretation of findings is the only way through which a researcher can expose relations and processes that underline the findings. The discussion of findings in this chapter is organised based on the research questions, key variables of UTAUT and the broader issues around the research phenomenon.

6.2   Demographic features of the respondents

Demographics in research are features of a population. Characteristics such as race, ethnicity, gender, age, educational qualification, years of experience, occupation, and designation are all examples of demographics that researchers use in research (Wyse, 2012). Vogt and Johnson (2011) define demography as an aspect of research in which researchers examine the quantifiable data of a particular population. Connelly (2013) is of the opinion that researchers usually gather demographic data in a research to describe the sample of participants in their studies. Furthermore, demographic data are a vital aspect of research and must be examined carefully. The current study required respondents to provide information on their gender, age, highest educational qualification, designation of librarians, years of experience, and duration of being a library user. The findings follow in the subsections below.

6.2.1   Distribution of respondents by gender

Findings revealed that there was a disparity between the male and female participants. Overall, the total of male library patrons were 134 (62.6 %), while 80 (37.4 %) were females. However, gender disparity did not affect the findings of this study. Similarly, Oyewo (2015) in a study of resources and services available to young adults in public libraries in Nigeria discovered that there were more male library patrons than females. Out of ninety-two respondents that participated in his study, 50 (54.4 %) were males, while 42 (45.6 %) were females.

Likewise, Omotosho and Okiki (2012) carried out a survey on the level of satisfaction of library patrons and the challenges confronting them in public libraries in Nigeria. The survey involved six public libraries in Lagos, Oyo and Ogun State. Two hundred (200) library patrons were involved in the study and findings indicated that there were more males than females. Male participants were 122 (61 %), while females were 78 (39 %). In addition, Heidi and Hoffman (2008) in a study of information literacy training in Canada's public libraries discovered that male library users outnumbered the females by a ratio ranging from 2:1 to 3.4:1.

Furthermore, findings of the present study revealed that male librarians were also more than the females. Overall result showed that 16 (64.0 %) indicated they were males, while 9 (36.0 %) indicated they were females. Lamont (2009) in a study on gender, technology, and libraries in the United Kingdom was of the opinion that men were in the majority in information

technology workforce in libraries and in the broader labour force. This, she said could be as a result of a complex series of social and cultural biases constraining women from partaking in technology in the library and in the larger labour force. Similarly, Onifade and Onifade (2011) in a study of staffing patterns in libraries in state colleges of education in Nigeria found that there were more male librarians than their female counterparts. A total of twenty colleges were surveyed and findings revealed that there were 63 (69.2 %) of male librarians, while 28 (30.8 %) were females.

Likewise, Okonedo, Azubuike and Adeyoyin (2013) also surveyed the awareness and use of Web 2.0 technologies by library professionals in selected thirty-nine academic and special libraries in South West Nigeria. Findings showed that most of the librarians 120 (53.3 %) were males, while the females were 105 (46.7 %). The findings of Adomi and Anie (2006) in an assessment of computer literacy skills of professionals in Nigerian University libraries found that out of the 51 professional librarians involved in the study, 31 (54 %) were males and 26 (46 %) were females. Even though Adomi and Anie's study dwelt on academic libraries, their result supports the findings of the present study that there are more male librarians than female librarians.

6.2.2   Distribution of respondents by age

Findings indicated that overall, the majority, 95 (44.4 %), of the library patrons were aged 18-25, while the least, 1 (0.5 %), belonged to the age group 66 years and above. It can be inferred from the findings that patrons who were 66 years and above rarely patronised the library. Findings suggest that most of the participants were in their youthful age. Obinyan, Obinyan and Aidenojie (2011) in a study of the use of information resources in public libraries in Nigeria, found that most 100 (41.7 %) of the respondents were aged 20-29. This corroborated Oyewo (2015) who surveyed resources and services available to young adults in public libraries in Nigeria. He established that library patrons between the age of 16-20 were 47.8 % and in the majority.

Findings further revealed that in the current study, the majority of the librarians 12 (48 %) were aged 31-40 years; only 4 (16 %) were 51-60 years and 21-30 years respectively. Eke and Ekwelem (2014), in a study of the availability of online reference services in libraries in Nigeria reported that out of three hundred and eleven (311) respondents that were surveyed, the majority, 143 (45.7 %) were in the age group of 31-40 years. The findings also showed that the

age group that had the least number of respondents was the 60 years and above category. Participants that belonged to this age group were only 19 (6 %). It may be inferred from the findings that librarians between ages 31-40 years were in the majority in the libraries surveyed than those who were 40 years and above or 31 years and below.

6.2.3   Distribution of respondents by educational qualification

Findings from this study revealed that overall, 18 (72 %) of the librarians possessed a masters' degree followed by 6 (24 %) who possessed a first degree. These findings support Okonedo, Azubuike and Adeyoyin (2013) who surveyed the awareness and use of Web 2.0 technologies by library professionals in thirty-nine selected academic and special libraries in South West Nigeria. They reported that most 120 (54.2 %) of respondents who participated in the survey were masters' degree holders followed by 82 (36.4 %) who had earned a first degree. Enakrire (2015) also carried out a study on the use of ICTs among professional librarians in some selected libraries in Nigeria and South Africa. He found that 64 (48.5 %) of the librarians possessed a masters' degree. This was followed by a bachelors' degree with 44 (33.3 %) respondents. The findings of Eke and Ekwelem (2014); Onifade and Onifade (2011) in different studies also corroborates the findings from this study. It can be inferred from the findings of the current study that an average professional librarian in the public libraries surveyed is likely to hold a masters' degree, while a para-professional is likely to hold a bachelors' degree.

The findings further revealed that for library patrons, the majority in IOSL 28 (36.8 %) possessed a first degree. This was followed by 20 (26.3 %) respondents who had a master's degree. In SAL, most 21 (38.2 %) of the respondents possessed SSCE. Also in OYSLB, SSCE had the highest number of respondents. A total of 23 (27.7 %) of participants indicated that they possessed SSCE. Iwhiwhu and Okorodudu (2012) examined if public patrons were satisfied with resources, facilities and services in Edo State, Nigeria. They surveyed 200 respondents and findings showed that 128 (65.3 %) had secondary education, while 60 (30.6 %) had tertiary educational qualifications.

Likewise, Obinyan, Obinyan and Aidenojie (2011), in a study of the utilisation of information resources and services in community public libraries in Edo State, Nigeria found that of the 240 respondents that were involved in the study, 176 (73.3 %) possessed SSCE qualification;

followed by those who had diploma certificate 40 (16.7 %). This was followed by those who were first-degree holders (18.5 %). Similarly, Parvathamma and Reddy (2009) examined the use of information resources and services in public libraries in Bidar district, India. They found that majority 61 (40 %) of the respondents were bachelor's degree holders. Next to this category, were those referred to as pre-university candidates, who were 53 (34.87 %).

Generally, it can be inferred from the present study and the reviewed studies that although there are those who possessed other types of qualifications or those that did not have any qualification, the majority of public library patrons in Nigeria possessed a minimum of SSCE qualification followed by those who possessed a bachelor's degree. It can also be inferred from the findings that PhD holders rarely used public libraries in Nigeria.

6.2.4 Designation of Librarians

Findings revealed that in the IOSL, one (1 (12.5 %) Library Officer; 2 (25 %) Librarians II; 1 (12.5 %) Librarian I; 2 (25 %) Senior Librarians; 1 (12.5 %) Principal Librarian and 1 (12.5 %) Deputy Librarian participated in the focus group discussion. There was no Assistant Librarian. The Director was not available to participate in the discussion; however, the Deputy Director was involved in the discussion. On the other hand, in the SAL, there was 1 (14.3 %) Library Officer; 1 (14.3 %) Librarian II; 2 (28.6 %) Librarian I; 2 (28.6 %) Senior Librarians and 1 (14.3 %) Director. The Assistant Librarian, Principal Librarian and Deputy Librarian were not available. The Director was, however, a part of the discussion. Finally, in OYSLB, there was 1 (10 %) Library Officer; 1 (10 %) Librarian II; 4 (40 %) Librarian I; 3 (30 %) Senior Librarians and 1 (10 %) Deputy Librarian. Although the library had an Assistant Librarian, Principal Librarian and Director of library services, they were not available to participate in the study. However, a Deputy Director was available and he participated in the focus group discussion.

6.3 Extent of automation in public libraries

The study sought to ascertain the extent of automation of public libraries in South West Nigeria. The following factors were used to determine the extent of automation: ICT facilities available and library services that have been automated.

6.3.1 ICT facilities available in the libraries

Findings on the ICT facilities available showed that the public libraries studied had a variety of ICT facilities. Most of these facilities were common in all three libraries. For example, the libraries had desktop computers for the use of its patrons and librarians. Findings also revealed that laptops in the library were not as common as desktops. Focus group discussions further revealed that the libraries had few official laptops that were used by the director, and senior library officers. Other librarians, as well as some patrons, had their personal laptops.

Findings also revealed that although the libraries had scanners, photocopying machines and printers, they were mainly used by librarians, especially for administrative purposes. Library patrons who needed these facilities usually accessed them outside the library premises. Findings further showed that the availability and use of projectors were only common in the Simeon Adebo Library (SAL). During the focus group discussion, it was revealed that projectors were used for presentations and workshops organised by the SAL for members of the community in which the library is situated.

Furthermore, the findings revealed that digital cameras were not common to all the libraries. Only OYSLB and IOSL had them in place. Findings also revealed that some patrons and librarians had their personal digital cameras, while the cameras on smartphones of some other respondents served the same function as the digital camera. The use of barcode readers was also not popular in the libraries. Only one participant signified its availability. Similarly, very few respondents said the libraries had fax machines. Likewise few respondents indicated the availability of mobile phones and smartphones in the library. However, findings showed that library patrons and librarians had personal mobile phones; the majority had smartphones while some had both. It was revealed that subscription to bandwidth for Internet connectivity in SAL and OYSLB had been put on hold due to inadequate funds. IOSL, on the other hand, was still able to subscribe to the Internet for both library patrons and librarians. The findings showed that in SAL and OYSLB librarians and patrons relied on their own personal Internet connectivity.

Librarians' Registration Council of Nigeria (LRCN) (N.D) in a study on the state of public libraries in Nigeria found that many public libraries lacked the basic ICT facilities that were needed to provide valuable service to the members of the communities in which they were

located. Some of the ICTs mentioned in the study include; desktops; laptops; iPads; photocopiers; printers; scanners; digital cameras and multimedia projectors. Similarly, Islam and Islam (2007); Usman and Udensi (2008) and Agbanu, Ofodile and Okeji (2010) in separate studies on the utilisation of ICTs in libraries, itemised computers, Internet, CD-ROM databases, audio cassettes, video cassettes, photocopier, printer, fax machine system, mobile phones, smartphones and television as some of the ICTs that were used in the libraries surveyed.

6.3.2 Library services that have been automated

Findings showed that not all library services were automated in all three libraries. In IOSL, new arrival awareness, library administration, selective dissemination of information cataloguing, user education, collection development, report generation, library registration and stock verification were automated. In SAL library administration, user education, library registration, report generation, stock verification selective dissemination of information, collection development and cataloguing were automated while in OYSLB collection management, selective dissemination of information, user education, library administration and report generation were automated.

Findings revealed that for services that had been automated, most of them were either partially automated or at the initial stage of automation. The qualitative data that was gathered from the focus group discussion confirmed these findings. One of the librarians had this to say, "I think I will like to categorise all library services as being partially automated because when you talk about library administration, for example, there are certain aspects that I would not categorise as being fully automated".

Anunobi and Ogbo (2011) investigated automation in South Eastern, Nigerian libraries. They surveyed six (6) public libraries and five ministries of education libraries and found that none of these libraries was automated. Achebe (2005) also examined the state of ICT in Nigerian public libraries and discovered that the use of ICTs in the thirty-four (34) public libraries were poor. Eze (2013) stated that library automation is a characteristic of libraries in the 21st century. Therefore, public libraries in Nigeria should assist in bridging the digital divide by transforming their services. She, however, noted that from observations so far, only academic libraries were compliant. In order for public libraries to deliver meaningful services to their

patrons, they need to integrate ICT facilities as much as possible into their operations, Eze (2013) concluded that automation is still seen as a myth in most Nigerian public libraries.

Emojorho (2011) in a survey of South South Zone, Nigeria examined ICT and collection management in public libraries. The findings of his study revealed that the extent of ICT application in this region was still unknown. In another study, Chisenga (2004) examined the use of ICTs in twenty-two (22) public library services in ten English-speaking African countries including Nigeria. Findings revealed that there were great discrepancies in the level of access to ICTs in the public libraries. He discovered that even though many public libraries had embraced the use of ICTs, it was ad hoc and highly inadequate.

Likewise, Islam and Islam (2007) in an empirical study of the use of ICT in selected libraries in Bangladesh found that the use of ICTs in Bangladesh was still in its infancy despite being one of the few nations of the world that adopted information technologies since 1964. Shuva (2010) examined the status of ICTs in public libraries in Bangladesh and observed that out of 68 public libraries; only 14 had some form of ICT facility. For some of the public libraries that had ICTs, these were only used for administrative purposes; and not to meet the numerous needs of the library patrons. It was also observed that there was no Internet access in any of the libraries.

Nwabueze and Ibeh (2013) examined the extent of ICT integration in the public library services in Anambra State, Nigeria. Findings showed that the libraries had the basic ICT facilities available such as computers, printer, scanner, memory stick, mobile phone, compact disc read only memory (CD-ROM) and photocopier. Findings further revealed that largely, ICTs had been adopted in some library services such as reference, library administration, user education, marketing of library services and circulation control. However, application of ICTs in other services such as security of library materials, acquisition, cataloguing and classification, interlibrary loan, indexing and abstracting services, bibliography services, serial control, preservation and data processing was still low. The findings suggest that even though the public libraries have embraced ICTs in their operation, the available ICTs are limited compared to the number of patrons hence rendering the use of the ICTs ineffective.

6.4   Frequency of use of ICT facilities in public libraries

Respondents were asked how frequently they used various itemised ICTs. Results showed that some of the ICTs were used more frequently than the others. Similarly, some ICTs were rarely used while some were never used by some of the respondents. (See result in Table 5.6). Findings further revealed that majority of the respondents used desktop computers, laptops, scanners, printers, audio-visual equipment, mobile phones, smartphones, photocopying machines and the Internet more frequently than projectors, digital cameras, barcode readers, fax machine and video conferencing tools. It was revealed that perceived usefulness (PU) and perceived ease of use (PEOU) determined the frequency of use of ICTs by participants. Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989:320). Perceived ease of use (PEOU) on the other hand is "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989:320). Participants make use of certain ICTs because they will improve their performance and because they are very easy to manipulate, while other ICTs are rarely used either because they do not improve the performance of participants or they are difficult to operate.

6.5   How patrons learnt the use of ICTs

Respondents were asked how they acquired knowledge on the use of ICTs. Findings revealed that majority, 161 (75.2 %) of the respondents acquired knowledge of ICTs through their personal efforts. A total of 22 (10.3 %) learnt how to use ICT facilities through assistance from fellow library patrons; 4 (1.9 %) learnt the use of ICTs through knowledge acquired from workshops conferences and seminars; 15 (7 %) acquired knowledge of ICTs through instruction manuals made available by manufacturers, while 12 (5.6 %) learnt the use of ICTs through the systems librarian of the libraries.

Singh (2015) examined the impact of ICTs on library and information services in Kendriya Vidyalaya library in India. Students and faculty were asked to indicate how they learnt the use of ICTs. Findings revealed that majority of the students (70) learnt the use of ICTs through their friends. Another (66) learnt the use of ICTs through colleagues/classmates. It was revealed by the findings that none of the students learnt the use of ICTs through training organised by the library and very few indicated that they learnt the use of ICTs through the library homepage. Looking at the results from the faculty perspective, the majority (275) indicated they learnt how to use ICTs through their friends; next were those who indicated colleagues (260). As it

was in the case of the students, very few (22) indicated that they acquired knowledge about ICTs through training organised by the library.

Sellan and Sornam (2013) surveyed the impact of ICT on library services in selected theological libraries in Bangalore City. They observed that library patrons learnt the use of ICTs either through librarians, self-study or from a friend. A total of 295 respondents were involved in the study. Findings revealed that 120 (40.7 %) acquired knowledge on the use of ICTs through the librarians; 94 (31.9 %) through self-study; 75 (25.4 %) through a friend and 6 (2.0 %) through other means. Furthermore, Odede and Enakerakpo (2014) in a descriptive survey studied ICT skills and usage among library and information science students in Delta and Edo states, Nigeria. They found that out of 238 respondents that participated in the survey, 161 (67.6 %) of the respondents indicated that they acquired knowledge of the use of ICTs by teaching themselves with manuals and handbooks. A total of 158 (66.4 %) indicated they were taught by their friends, relatives or colleagues. Other methods mentioned include; courses in school; through trial and error method; through cyber café and through tailored models such as Geronet. It is evident from this result that none of the respondents mentioned that they acquired knowledge of ICTs through the assistance of a librarian.

6.6   Skill and competency in using automated systems

The application of various forms of ICTs has changed the way in which public libraries function. As a result of this revolution, there has been an increase in new skills, job descriptions and work environment that librarians have to adjust to. This section provides answers to research question three of this study.

6.6.1   Proficiency in the use of ICTs

Findings of this study revealed that majority of the library respondents were proficient in the use of various ICTs. However, their level of proficiency differed. Some had an excellent level of proficiency or high level of proficiency or average level or low level and no proficiency at all. It was revealed that most of the respondents were proficient in the use of desktop computers and laptops. Only 12 (5.6 %) of the respondents had a low level of proficiency for desktop and laptops respectively, while 1 (0.5 %) had no skill at all for the use of laptops. The majority of the respondents were also proficient in the use of scanners. Findings showed that only 6 (2.8 %) were not skilled at all in its operation. Similarly, only 6 (2.8 %) were not proficient in the use of printers. All others had one level of proficiency or the other.

Findings further revealed that library patrons were not familiar with the use of projectors compared to the desktop, laptop and scanners. About one-quarter of the population, 54 (25.2 %) did not have any skill in its operation, while 64 (29.9 %) had low skill. For digital camera, 11 (5.1 %) did not have any skill in operating it. All others had a level of skill. Similarly, only 3 (1.4 %) had no skill in operating audio visual equipment. Like the projector, the use of barcode reader recorded a high number of respondents who did not have any skill in its operation. They were 97 (45.3 %) while 38 (17.8 %) had low skill. The same applies to the use of a fax machine. A total of 60 (28 %) were not skilled in its use. In addition, all respondents were proficient in the use of mobile phones, smartphones and the Internet. Furthermore, 26 (12.1 %) of participants were not skilled in the use of a photocopying machine; 11 (5.1 %) were not skilled in accessing the libraries online public access catalogue (OPAC). In addition, only 1 (0.5 %) respondent was not skilled in the use of social media such as Facebook, Twitter, and WhatsApp. Finally, findings revealed that 2 (0.9 %) of patrons did not have any skills in manoeuvring the library database.

Krubu and Osawaru (2011) in an investigation of the impact of ICT in Nigerian University Libraries examined ICT proficiency of respondents. Findings revealed that majority of the respondents 21 (43.7 %) had good computer proficiency; 19 (39.6 %) indicated fair proficiency; 3 (6.3 %) had excellent proficiency, while 5 (10.4 %) had no proficiency at all.

Umeji, Ejedafiru, and Oghenetega (2013) in a descriptive survey examined information /ICT literacy levels and skills among librarians in Madonna University Library. They found that 2 (18.15 %) of the librarians had high levels of proficiency in ICT literacy. A total of 3 (27.27 %) had a moderate level of proficiency. Also, 3 (27.27 %) had low levels of proficiency while 1 (18.1 %) had very low levels of proficiency. Findings revealed that the librarians' proficiency in ICT literacy was poor. The author recommended that librarians should participate in training programs organised by professional bodies in the field of librarianship such as Nigerian Library Association, Librarians Registration Council of Nigeria and American Library Association. These professional bodies will help librarians to keep abreast of recent advancement in librarianship.

6.6.2 Important ICT Skills

According to Adomi and Anie (2006), the adoption of ICTs in Nigerian libraries requires librarians who are skilful enough to manipulate such ICTs so as to be able to meet the needs of

library patrons. Okiy (2005) is also of the opinion that the employment of librarians should be based on their ability to utilise various forms of ICTs. Findings from the study revealed that out of all the various skills that were listed, the majority of the respondents strongly agreed that it was vital to possess skills such as accessing the Internet; the use of social media; word processing; use of email and the use of Microsoft excel. On the other hand, very few 7 (3.3 %) of respondents strongly agreed that programming was vital, 31 (14.5 %) agreed while majority 113 (52.8 %) disagreed that it was not an important skill that a library patron should possess.

Findings further revealed that most of the respondents 134 (63.0 %) had a good knowledge of handling computer hardware, using smartphones, using power point, using OPAC and assessing databases. Odede and Enakerakpo (2014) studied ICT skills and Internet usage among library and information science students in Delta and Edo States, Nigeria and found that library patrons had different types of skill that was required of them to use the library effectively. These skills include; ability to start up, log on and shut down a computer; ability to make use of a mouse and keyboard; ability to identify icons and make use of them; ability to create different types of documents and save them in a location of choice; ability to save as well as open an attachment from an email; ability to launch web browser and ability to download files and images from a web page.

Findings from the focus group discussion revealed that majority of the librarians in all libraries studied were competent in the use of various ICTs within the library. Findings also showed that their level of competence differed with some being highly competent and others averagely competent. In IOSL for example, only a few librarians especially paraprofessionals were about 50 % competent. Findings from the focus group discussion revealed that majority of librarians were doing well in terms of ICT competencies. However, they agreed that there was still room for improvement if they had access to more ICT facilities and requisite training. The findings of Nwabueze and Ibeh (2013) in a study of the extent of ICT integration in public library services in Anambra State, Nigeria corroborated this study. They found that to a large extent, librarians in the public libraries possessed the essential skills for integration of ICTs in the library and therefore knew how to use computers, printers, scanners, web 2.0, Internet, Microsoft word, Microsoft excel and search engines to do their work and also to assist patrons.

In order to remain relevant in the 21st century, Farkas (2006) identified basic skills that a librarian should possess. These skills include; ability to embrace change; comfort in the online

medium; ability to troubleshoot new technologies; ability to easily learn new technologies; ability to keep up with new ideas in technology and librarianship (enthusiasm for learning). She encouraged that library schools could begin to teach these skills early in their training programs. Furthermore, she noted more importantly that librarians must have a higher level competency including project management skills; ability to question and evaluate library services; ability to evaluate the needs of all stakeholders; vision to translate traditional library services into the online medium; ability to compare technologies and the ability to sell ideas/library services.

6.7   Frequency of training in public libraries

Training is "an integral part of vocational or career development and it is fast becoming a global and pervasive phenomenon in any establishment, the absence of which spells doom for such an institution and the presence of which determines the success of any enterprise" (Ajidahun, 2007:3). Findings of the present study revealed that training programs for both patrons and librarians in all libraries were infrequent. It was revealed that training programs were formerly done on a quarterly basis but this is no longer the case due to the economic conditions of Nigeria. Training is now done once a year because there is no form of training that would not involve money. Julen and Hoffman (2008) in an examination of the role of Canadian public libraries in developing the public's information literacy (IL) skills found that some of the public libraries were not offering training services to their patrons because of lack of funding, trained personnel and inadequate space. Findings also revealed that most of the respondents agreed that training library patrons were a mandatory service that public libraries should offer to their patrons. They further agreed that public libraries should provide guidelines on how patrons should access both formal and informal information.

Similarly, Eze (2012) in an investigation of staff training programs in Enugu State Public Library in Nigeria enquired into the training needs of librarians. She found that public library librarians needed training to further educate themselves to acquire more skills and experience in their work; for better communication with their clients and colleagues; for more capability to attend to their numerous library patrons. Findings further revealed that training programs were inadequate in the library. This was because of the absence of funds, lack of trained personnel and lack of training policies. Likewise, Tella, Ayeni and Popoola (2007) studied work motivation, job satisfaction, and organisational commitment of library personnel in

academic and research libraries in Oyo State, Nigeria. They emphasised that one fundamental way that the library management can improve the working conditions of librarians is to engage them in on the job training programs from time to time. They further stressed that training of staff is an essential strategy for staff motivation. Their findings revealed that organising frequent training programs is the key to increasing motivation and job satisfaction among workers. To buttress Tella *et al.* (2007); Kulkarni and Deshpande (2012) highlighted in a study that the single purpose of training is to improve understanding, competency and attitude of workers so as to carry out their duties more professionally and meritoriously.

6.8   How ICT enhances use of the library

Using a Likert scale of strongly agree, agree, disagree, strongly disagree and neither agree nor disagree, respondents were asked to signify if different ICTs have enhanced their use of public libraries. Findings showed that for the use of desktop, out of 214 respondents that completed the survey, 6 (2.8 %) disagreed; 3 (1.4 %) strongly disagreed and 1 (0.5 %) neither agreed nor disagreed. However other respondents either agreed or strongly agreed that ICTs have enhanced their use of the library. On the use of laptops, 9 (4.2 %) disagreed; 3 (1.4 %) strongly disagreed and 1 (0.5 %) neither agreed nor disagreed. Others either strongly agreed or agreed.

Generally, for all the ICTs it was revealed that only a few respondents as presented in table 5.7 did not agree to the fact that some ICTs mentioned enhanced their use of the library. It could be inferred from the findings that those that were not proficient in the use of a particular ICT would not appreciate its use and would, therefore, indicate that it does not enhance his/her use of the library. However, findings showed that majority of library patrons appreciated the usefulness of ICTs and agreed that it had enhanced their use of ICTs to date.

Similarly, the results of the focus group discussion revealed that librarians had embraced ICTs irrespective of the several challenges they faced in its adoption. Respondents in IOSL noted that the application of ICTs in their daily routine had enhanced their performance and it saves time and reduces monotony. Respondent IOSL8 stated further that in aspects of administration, ICT had been superb. Similarly, respondent IOSL4 mentioned that "as a cataloguer, it has made it possible to catalogue library materials according to the title, author or subject. A library user who needs a book, for example, can either search with the name of the author, title or the subject of the book. It has made life easy".

In addition, in SAL, respondent SAL6 commented that ICTs have enhanced job performance, output, efficiency, service delivery and library operations. Furthermore, respondent SAL6 indicated that ICTs enabled close monitoring of activities in the library. "I get updated as quickly as possible and find it much easier to communicate with the branch libraries".

Likewise, in OYSLB, respondent OYSLB4 explained that "in line with the current trend of ICTs, it has been of great significance. Even though the library is not where it ought to be in terms of applying ICTs, the little we have been able to adopt has really helped in performing our duty. It has had a positive influence, bringing about efficient and effective service delivery". Similarly, respondent OYSLB10 stated that "for me, ICT has really been useful in answering several queries within the shortest possible time. I can easily go on the Internet to get responses to several queries patrons may ask". Ademodi and Adepoju (2009) in a study of computer skills among librarians in Ondo and Ekiti States stated that the presence of ICTs has brought about transformation in the way and manner libraries offer services to clients. Similarly, Islam and Islam (2007) in an empirical study of the use of ICTs in selected libraries in Bangladesh found that ICTs enhanced the smoothness of library operations. They noted that librarians in Bangladesh made use of different types of ICTs to carry out library activities/services. According to Islam and Islam (2007) and Idowu (2011) these services include information processing, document delivery service, charging and discharging of library materials (also referred to as circulation), cataloguing, classification, serials management, exhibition and displays, indexing, abstracting, book acquisition, selective dissemination of information (SDI), serials acquisition, reference services, current awareness, user education, interlibrary loan or exchange, e-mail services, communication, referral services bibliographic services, printing and duplicating/reprographic services.

In addition, Saima, Rubina and Shafi (2014) noted that the application of ICTs in libraries makes it possible for numerous library users to get speedy and easy access to relevant and recent information irrespective of whether they visit the library or they stay at home. Furthermore, Saleem, Tabusum and Sadik (2013) are of the opinion that the use of ICTs in libraries provide round the clock access to patrons, provides access to information from diverse sources, provides access to limitless information and provides flexibility. Library automation has also facilitated a reduction in library crimes through the application of Radio-Frequency

Identification (RFID) and the installation of Closed Circuit Television (CCTV) (Krubu & Osawaru, 2011).

Finally, according to Ebunuwele, Ola and Uduebor (2014) the application of ICTs in libraries permits the combination of various activities. It helps to avoid duplication of efforts which could lead to monotony, it also increases the variety of services offered and offers marketing opportunity of its services.

6.9 Factors influencing adoption and use of automated systems

The second research question in this study sought to investigate the factors influencing acceptance and use of ICTs in public libraries in South West Nigeria. The constructs of the UTAUT were applied in addressing this question. These constructs include performance expectancy, effort expectancy, social influence and facilitating conditions. Performance expectancy is defined as the degree to which an individual believes that using a system will enhance performance on a job (Venkatesh *et al.*, 2003). Effort Expectancy is the degree of ease associated with the use of the system (Venkatesh *et al.*, 2003). Social influence is the individual's perception that a person who is important to him/her thinks s/he should use the system (Venkatesh *et al.*, 2003). Facilitating condition is the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system (Venkatesh *et al.*, 2003).

The findings revealed that performance expectancy, effort expectancy (ease of use), facilitating condition and social influence were important factors that influenced the use of ICTs by respondents in the libraries involved in the study. The results revealed that usefulness of ICTs, ease of use, availability of infrastructure, uninterrupted power supply, support from the management of the libraries, support from the government, support from superiors, availability of quality training programs, the presence of qualified and trained personnel, availability of recent technologies and good Internet access are factors that encourage the use of ICTs. The findings corroborate Ghalandari (2012) who investigated the effects of performance expectancy, effort expectancy, social influence and facilitating conditions on acceptance of e-banking services in Iran. Findings from the study revealed that performance expectancy, effort expectancy, social influence and facilitating conditions had a high significant effect on users' behavioural intention to use e-banking services.

Dulle and Minishi-Majanja (2011) in an examination of the suitability of the UTAUT model in open access adoption in public Universities in Tanzania found that effort expectancy and performance expectancy were among the major important predictors of researchers' intentions to make use of open access. Findings further revealed that the prevalent use of open access will occur only when important facilitating conditions are in place. In another study, Chung, Chen and Kuo (2015) discovered that performance expectancy and effort expectancy both influenced the acceptance of mobile learning systems among engineering students. In a similar study, Jackman (2014) investigated the factors influencing the acceptance of mobile learning among students at the University of the West Indies in Barbados using the UTAUT model. It was revealed that performance expectancy, effort expectancy, and facilitating conditions were important determinants of intentions to embrace mobile learning technologies. However, in the Caribbean context, social influence was found to have no significant effect. Likewise, Abu-Al-Aish and Love (2013) investigated the factors influencing students' acceptance of m-learning and found that mobile learning, if applied effectively, would play a significant role in the improvement of teaching and learning in higher education. Findings further revealed that performance expectancy, effort expectancy, the influence of lecturers, quality of service, and individual innovativeness were all important elements that affect behavioural intention to use mobile learning.

A conflicting result was obtained in the study of Mtebe and Raisamo (2014) where they adopted the UTAUT model to elicit responses on the intention to adopt and use Open Educational Resources (OER) by instructors in teaching. They found that only effort expectancy influenced the instructors' intention to use OER. Results further showed that performance expectancy, facilitating conditions and social influence did not have a significant influence on OER use. Alabi (2016) in a study of the adoption and use of electronic instructional media among academics in selected Universities in South West Nigeria adopted UTAUT and Diffusion of Innovation (DOI) theories. She found that effort expectancy and facilitating conditions such as uninterrupted power supply, adequate training programs, ICT policy, provision of sufficient funding, adequate bandwidth, support from the management, significantly determined the adoption and eventual use of electronic instructional media.

Likewise, Hsiao-Hui (2012) carried out an empirical study on the acceptance and use of Moodle in Taipei, Taiwan. He employed the UTAUT model to underpin the study. Findings revealed that performance expectancy, effort expectancy and social influence were the key

constructs of UTAUT model. These key constructs determined whether the students would utilise Moodle or not. He went further to say that behavioural intention acted as a mediator to urge students' use of Moodle. However, he noted that facilitating conditions was not a significant predictor of technology acceptance in an advanced information infrastructure community like Taiwan.

Similarly, AlAwadhi and Morris (2008) in a study of the factors determining the adoption of e-government services in a Kuwait found that performance expectancy, effort expectancy, peer influence and facilitating conditions were significant in the adoption of e-government services in Kuwait. Furthermore, Alrawashdeh, Muhairat and Alqatawnah (2012) studied the factors affecting acceptance of web-based training system using extended UTAUT. They found that performance expectancy, facilitating conditions, social influence and system flexibility influenced employees' intention to use web-based training system. However, effort expectancy, system enjoyment and system interactivity have an indirect effect on employees' intention to use the system.

6.10   Challenges of managing automated systems in public libraries

The result indicated that the major challenge public libraries faced in the adoption of automation were inadequate funding as stated by 213 (99.5 %) participants. This was followed by erratic power supply by 200 (93.5 %) respondents. In addition, 195 (91.1 %) respondents stated that they lacked access to training programs. Findings further indicated that 194 (90.7 %) respondents indicated that they experienced inadequate ICT infrastructure. A total of 151 (70.6 %) respondents stated that lack of technical skills was another challenge they faced. In addition, 126 (58.9 %) patrons noted negative attitude towards automation, while 104 (49.1 %) reported a lack of commitment from the management. Finally, 90 (42.1 %) of the respondents indicated that unsatisfactory library software was another challenge they encountered in adopting automated systems. The findings revealed diverse hindrances to the smooth adoption of automation in the libraries studied.

Over the past two decades, public libraries in Nigeria have suffered deterioration due to the political and economic state of the nation (Ebiwolate, 2010). Iwhiwhu and Okorodudu (2012) reported that public libraries found it difficult to operate due to inadequate funding and poor infrastructure. Opara (2008) emphasised that "the bane of public libraries in Nigeria is poor funding and every other problem confronting them emanates from that". He further noted that

the problem of funding has been compounded by inflation, information explosion and the growing concern for the provision of information in all its formats. Mutula (2012) argues that absence of a budget for automation in most university libraries has been attributed partially to the inability of library staff to effectively articulate the benefits that are to be derived from investing in ICT to the authorities. Although his study focused on University libraries, automation in any kind of library whether special, academic, school or public require the same procedure and strategy.

Abdulkarim (2010) and Omotosho and Okiki (2012) observed that the use of digitisation in public libraries in Nigeria is limited because of lack of knowledge at the policy level. Furthermore, Umeji, Ejedafiru and Oghenetega (2013) opined that poor level of ICT knowledge, unenthusiastic attitude to the profession, lack of ICT literacy/expertise were some of the challenges facing librarians. Gbadamosi (2012) stressed that computer illiteracy among librarians was a major challenge libraries were facing in adopting automation. Where librarians were knowledgeable, they were not versatile enough to apply the skills as demanded in an automation environment. Some librarians were reluctant and did not want to let go of the traditional ways of delivering library services that they had been used to. Some of them were said to be suffering from technology phobia.

Another challenge militating against effective automation in public libraries is a technological problem. This comprises hardware and software challenges (Raval, 2013). Dilroshan (2009) in a study of problems encountered in the process of automation stated that libraries encountered problems with the choice of software they adopted. Some of these challenges include; acquiring unsuitable software that cannot meet the needs of the library; high cost of software and maintenance; when software is not user friendly; difficulty in comprehending the manuals that were provided by software manufacturers; limitation in number of records that can be keyed in; lack of training on how to use the software; lack or inadequate vendor support and inability to update software. Raval (2013) opined that the main problems libraries are facing in terms of hardware are the adoption of a variety of brands of computers.

Chisenga (2004) in a survey of the use of ICTs in African public library service found that the effective use of ICTs was being hindered by a lack of commitment from the parent organisation. Another challenge is inadequate ICT resources, obsolete policies, difficulty in employing and retaining qualified ICT personnel. Oghenetega, Umeji and Obue (2014) identified political

issues, poor maintenance of facilities, controlled access to patrons, policy structure of the government, poor networking, economic factors, economic issues and cultural issues.

6.11   Suggested solutions to challenges encountered in the use of automated systems

The focus group discussion with librarians sought to ascertain how the above challenges could be resolved. Respondents suggested the following solutions: policies guiding the adoption of automated systems must be designed; budgetary allocation to public libraries must be increased; attitudinal change on the part of the government; attitudinal change on the part of librarians who have phobia for ICTs.

Opara (2008) in a study of challenges facing public libraries and the way forward suggested that adequate funds be made available for the acquisition and maintenance of library materials. He added that infrastructure in the library must be given serious attention; this is because a library with better resources will definitely perform better because "resources are the source of organisational capabilities'' (Amekuedee, 2005:451).

Eze (2013) opined that for public libraries in Nigeria to actualize their visions and adjust to the automation environment as it is in developed countries, there must be a positive change in funding by the government. She added that a sufficient number of professional and para-professional librarians must be employed. After employment, consistent training and re-training must be done regularly to ensure that they acquire up-to-date ICT skills to be able to take public libraries to the next level.

According to Chisenga (2004), parent organisations must offer support to public libraries. They should become more committed to allow for improvement of ICT infrastructure in these libraries. There is also a need for the development of strict ICT policies that will guide public libraries in the adoption of ICTs. If this is not done, public libraries will continue to use ICTs in an ad hoc way. Chisenga (2004) added that public libraries embarking on automation or those in early stages must form a consortium with libraries that have gone ahead of them. He gave an example of South Africa who has made tangible progress and now have a wealth of experience in the application of ICTs. This is essential in order to avoid previous mistakes they experienced and to be able to incorporate best practices into future plans.

Oghenetega *et al.* (2014) suggested that ICT specialists who render services to public libraries should support their development by decreasing the cost of installing ICT facilities in these

libraries. They also stated that the government and other charitable organisations that support public libraries should be given additional orientation from time to time on the need for continual support of public libraries. According to Mutula (2012), once library services are computerised, there is need to provide adequate backup for electricity. For example, solar electronic generating system and power inverter or any other electric power alternative could be needed (Adegbore, 2010). Whenever there is a power outage or load shedding, library services should not come to stop.

Mishra, Thakur and Singh (2015) advised that in order to save time, money, energy and to ensure that automation succeeds, proper planning is important before the process of automation. He stressed that this planning should include a good feasibility study to help determine the adequacy of the automation process. He stated that planning also involves the following: the objective of the library, funding and budget, system analysis, identification of key area of library automation, sources of data, hardware requirement and software required for the process.

Dilroshan (2009) advised that in the process of automation, the choice of software to adopt is a vital decision that should be made and in making such decision, the following should be put into consideration: a suitable software that will meet the needs of the library should be acquired; the cost of acquisition and maintenance should be affordable; user friendliness of software; software manual must be easy to understand; the software must have a large memory to accommodate the entire information in the library; availability of training by software vendor; software vendor must be ready to give support at any time it is required. Raval (2013) advised that manufacturing of computers with superior capability for library automation should be considered.

6.12   Summary

This chapter discussed and interpreted the findings of the study. Research questions, theoretical framework that underpinned the study and review of existing literature served as a guide to the discussion of the findings. The results on the demographic data revealed that there were more male library patrons than females. In addition, there were more male librarians than females. The results on the ages of library patrons showed that majority were in the 18-25 age group, while for librarians, the majority were in the 31-40 category.

Findings further revealed that majority of the librarians possessed a masters' degree while the majority of the patron possessed a minimum of SSCE qualification. In addition, for the duration of being a library user, it was revealed that most of the respondents were new users of the library who had used the library for 1-5 years. Very few had been registered with the library for 21 years and above. For the librarians, the majority had been a staff of the library for 11-15 years.

It was revealed that the public libraries had facilities like, computers, laptops, scanners, photocopying machines, scanners, audiovisual equipment which was common to all libraries studied. However, facilities like projectors were common to SAL only. It was revealed that not all services and departments had been automated and for those that have been automated, most of them were either partially automated or at the initial stage of automation. The UTAUT theory was used to underpin the study.

Findings revealed performance expectancy, effort expectancy, social influence and facilitating conditions influenced the adoption and use of ICTs by library patrons and librarians in public libraries in South West Nigeria.

Findings further revealed that public libraries experience several challenges in the adoption of ICTs. These include; inadequate funding, erratic power supply, inadequate ICT infrastructure, lack of access to frequent training programs, lack of technical skills, negative attitude towards automation, lack of commitment from the management and unsatisfactory library software. Some suggestions were given to address these challenges. The suggestions included: policies that guide the adoption of automated systems should be put in place; an increase of budgetary allocation to public libraries; attitudinal change on the part of the government; and attitudinal change on the part of librarians who have phobia for ICTs.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1   Introduction

The purpose of this study was to investigate the extent of automation of public libraries in South West Nigeria. The study sought to address the following research questions:

1. What is the level of public library automation in South West Nigeria?

2. What are the factors affecting the adoption and utilization of ICTs in public libraries in South West Nigeria?

3. What are the skills and competencies that librarians and patrons possess in the use of ICTs?

4. What are the challenges experienced by librarians and patrons in the use of ICTs?

The study adopted the survey method to select participants from the selected public libraries in South West Nigeria. The post-positivist paradigm was used. The UTAUT model was the theoretical framework that underpinned the study. Systematic sampling technique was used to select respondents that participated in the survey. They included library patrons, para-professional and professional librarians. Data was gathered through the use of questionnaires and focus group discussion. The response rate for library patrons was 86 % while that of librarians was 71.4 %. Data was analysed using SPSS. Frequency counts, percentages, cross tabulation and bar charts were used for analysis of quantitative data, while qualitative data was analysed using content analysis. This chapter presents a summary of findings, conclusion, recommendations, and contribution of the study to theory, practice, policy and suggestions for further studies.

7.2   Summary of findings

The summary of findings cover the demographic details, the extent of automation, factors influencing adoption and use of automation, skills and competency of library patrons and librarians in using automated systems and challenges of managing library automated systems.

7.2.1   Demographic profile of participants

The results revealed that male library patrons were more than females. A total of 134 (62.6 %) were males while females were 80 (37.4 %). Findings also revealed that male librarians outnumbered their female counterparts. Males were 16 (64.0 %) while females were 9 (36.0 %). Lamont (2009) found that men were in the majority in information technology workforce in libraries and in the broader labour force. As a result of this assertion, it was necessary to ascertain the number of males and females in the workforce of the library.

In addition, majority of the library patrons were within the age group of 18-25 years. Only 1 (0.5 %) was within the age range of 66 years and above. Therefore majority of the library patrons were in their youthful age and patrons who were 66 years and above rarely patronised the public libraries. Findings further revealed that most of the librarians 12 (48 %) were aged 31-40 years, 4 (16 %) were 51-60 years and 21-30 years respectively. Therefore, librarians between ages 31-40 were more than 40 years and above or 31 years and below.

Results of educational qualification of respondents revealed that majority 28 (36.8 %) of the patrons in IOSL possessed a first degree. In SAL, most of the respondents, 21 (38.2 %), possessed SSCE qualification. Similarly, in OYSLB, 23 (27.7 %) of participants indicated that they possessed SSCE qualification. Findings from the study revealed that majority of the patrons in public libraries in Nigeria possessed a minimum of SSCE qualification. Findings further revealed that PhD holders rarely used the public libraries. Furthermore, the results revealed that on average a professional librarian in the public libraries surveyed is likely to hold a masters' degree while a paraprofessional is likely to hold a bachelors' degree.

Results showed that most, 139 (65 %) of the patrons had been registered with the library for 1-5 years. Only 2 (0.9 %) had patronised the library for 25 years and above. It was discovered from the study that majority of the respondents were newly registered users. Findings from the years of experience of librarians revealed that majority of them had 11-15 years of experience.

7.2.2   The extent of automation of public libraries in South West Nigeria

The first research question of this study sought to examine the extent of automation of public libraries in South West Nigeria. The extent of automation was determined by ICT facilities available in the library, services that had been automated and the stages of automation. The findings revealed that several ICTs were adopted by the public libraries studied. The common ICTs were desktop computers, laptops, mobile phones, smartphones, scanners, printers, audio visual equipment and photocopying machines. Findings further revealed that some of the ICTs were more frequently used than others. Those that were frequently used include desktop computers, laptops, mobile phones, smartphones and printers. Details of these results are presented in section 5.5 and 5.6 of this thesis respectively.

Findings also revealed that not all library services were automated in the libraries. Focus group discussion corroborated the results from the questionnaires. Librarians indicated that in IOSL for example, the following services had been automated: new arrival awareness, selective dissemination of information, stock verification, library administration, cataloguing, user education, collection development, report generation and library registration. In SAL, library administration, user education, library registration, report generation, stock verification, selective dissemination of information, collection development and cataloguing were automated. Likewise, in OYSLB, collection management, selective dissemination of information, user education, library administration and report generation were automated. Results further showed that some services in the libraries studied were not automated at all. These include online renewals, serial control, interlibrary loan and public access.

Results further revealed that automated services were at different levels of automation; while some were at their initial stages others were partially automated. For instance, respondents were asked to state the level of automation in IOSL. Some of the responses quoted verbatim follow: "For all the services mentioned above, in my opinion, I will say all except library administration are partially automated". "I would not like to over-flog this, I will like to support what my colleague has said. Although the management is trying to make sure all library services are fully automated, there exist certain challenges beyond our control. As time goes on and with continual support from the government I believe we will get there".

Similarly, in SAL, respondents indicated that library administration was fully automated. Another respondent stated that stock verification was at its initial stage while other services mentioned earlier were partially automated. Another respondent noted: "I think I will like to

categorise all as being partially automated because when you talk about library administration, for example, there are certain aspects that I would not categorise as being fully automated. Likewise, in OYSLB, one of the respondents noted, "It is a bit difficult categorising the level of automation. All I will say is that we have a long way to go". Another respondent stated, "I think I will say all these services are at their initial stages of automation. We have not yet arrived at all. We cannot compare what we have on ground to what exists in public libraries in developed countries. For instance, when I visited South Africa a few years ago, I was amazed at the grounds that we still have to cover". It is, therefore, evident from the above statements that most of the library services in all three libraries were either at the initial stages of automation or partially automated.

7.2.3 Factors influencing acceptance and use of ICTs in public libraries in South West Nigeria

The second research question examined the factors influencing acceptance and use of ICTs. Both qualitative and quantitative methods were used to address this question. The question was also addressed by analysing the constructs of UTAUT which are performance expectancy; effort expectancy; social influence and facilitating conditions. Findings revealed that all the four constructs afore-mentioned were highly significant in determining the use of ICTs by librarians and patrons of public libraries in South West Nigeria. Furthermore, facilitating conditions such as the presence of qualified and trained workforce, availability of latest technologies, availability of quality training programs, constant power supply, availability of infrastructure, support from the management of the libraries, very good Internet access, support from the government and full support from superiors were facilitating conditions.

7.2.4 Skills and competencies that librarians and patrons possess in the use of ICTs

The third research question sought to find out the skills and competencies that librarians and patrons possessed in carrying out their day to day routines. Findings revealed that library patrons were skilful in the use of diverse ICTs that were available in the library. Findings revealed that the level of proficiency varied. While some had an excellent level of proficiency, some were highly proficient, some averagely proficient while some had a low level of proficiency. It was revealed that majority of the respondents were proficient in the use of ICTs. For instance, only 12 (5.6 %) of the respondents had a low level of proficiency for the use of desktop computers. Similarly, only 6 (2.8 %) were not skilled at all in the use of scanners. Likewise, only 6 (2.8 %) were not proficient in the use of printers. All others had one level of

proficiency or the other. Findings further revealed that majority of patrons had a low level of proficiency in using ICTs that were not used frequently in the library such as projectors and video conferencing equipment.

Furthermore, focus group discussion showed that most librarians were competent in the use of various ICTs. Findings also revealed that their level of competency differed. While some were highly competent, others were averagely competent. Results further showed that most librarians were doing extremely well even though there was still room for improvement if they had access to more ICT facilities and frequent training programs.

Findings further showed that most of the participants agreed to the fact that the following are vital skills that a library user must possess; knowledge of good use of Internet; how to use social media; how to use word processing; emailing, how to use Microsoft excel, knowledge of computer hardware, use of smartphones, use of power point, use of OPAC and skilfulness in accessing databases. However, majority 147 (68.7 %) of the respondent did not agree that programming is a vital skill that a library user should possess.

7.2.5 Challenges experienced by librarians and patrons in the use of ICTs

The fourth research question sought to investigate the challenges library patrons and librarians encountered in the application of ICTs. Findings revealed that the major problem patrons and librarians were experiencing were inadequate funding. Opara (2008) emphasised that "the bane of public libraries in Nigeria is poor funding and every other problem confronting them emanates from that". Out of 214 respondents, 213 (99.5 %) complained about limited funding. Other challenges that were raised include erratic power supply, inadequate training, inadequate ICT infrastructure, lack of technical skills, negative attitude towards automation, lack of commitment from the management and unsatisfactory library software.

7.3   Conclusion

This section presents the conclusion of the study. It provides conclusion on the following: demographic details of participants; extent of adoption and use of automated systems in public libraries; factors influencing the adoption and use of automated systems; skills and competencies that librarians and patrons possess in the use of ICTs and challenges patrons and librarians encountered in the adoption and use of automated systems.

Overall, the results of the study has revealed that the extent of automation in public libraries in South West Nigeria was still very low. Even though some library services had been automated, some were yet to be automated. In addition, those services that had been automated were at early stages of automation or partially automated. The study also established that performance expectancy; effort expectancy; social influence and facilitating conditions influenced the acceptance and use of ICTs by patrons and librarians. Additionally, it was revealed that majority of library patrons and librarians were skilful in the use of ICTs. However, they had varying levels of competencies. Furthermore, patrons and librarians experienced some challenges that hindered the effective use of ICTs in libraries. If these challenges are not resolved, public libraries will continue to use ICTs in an ad hoc manner and would not be able to fulfil the purpose of meeting the numerous needs of their patrons.

7.3.1   The extent of automation of public libraries in South West Nigeria

Generally, findings of the study revealed that the extent of automation of public libraries in South West Nigeria was still very low. Although some services within the libraries were automated, others were yet to be automated. In addition, those services that had been automated were either in their early stages of automation or partially automated. None of the library services was fully automated. Findings further showed that the libraries still lacked some important ICT facilities. For instance, the use of security systems was yet to be in place in all the libraries that were studied. Similarly, reliable software that can accommodate all the routines of the library was lacking. The study concludes that Nigerian public libraries are yet to embrace fully the use of ICTs in the implementation of library services.

7.3.2 Factors influencing acceptance and use of ICTs in public libraries in South West Nigeria

The study established that all the four constructs that make up UTAUT namely; performance expectancy; effort expectancy; social influence and facilitating conditions influenced the acceptance and use of ICTs in public libraries in South West Nigeria. Furthermore, findings from the focus group discussion revealed that patrons and librarians will be more encouraged to use ICTs if the following facilitating conditions were available; presence of qualified and trained workforce; availability of latest technologies; availability of quality training programs; constant power supply; availability of infrastructure; support from the management of the libraries; very good Internet access; support from the government; support from management and support from superiors.

7.3.3 Skills and competencies that librarians and patrons possess in the use of ICTs

Findings showed that majority of library patrons and librarians were skilful in the use of ICTs. Findings further revealed that their level of proficiency varied. Some respondents indicated that they had an excellent proficiency, some had a high level of proficiency, some had an average level of proficiency and some had a low level of proficiency. The study also revealed that respondents were more skilful in ICTs they used frequently such as desktop computers, laptops, mobile phone and smartphones. Moreover, results revealed that respondents had a low level of proficiency or were not proficient in ICTs that were rarely used or never used such as a multimedia projector.

Findings further showed that most of the participants agreed to the fact that the following were vital skills that a library user must possess; knowledge of good use of Internet; how to use social media; how to use word processing; emailing, how to use Microsoft excel, knowledge of computer hardware, use of smartphones, use of power point, use of OPAC and skilfulness in accessing databases. Furthermore, focus group results further showed that majority of librarians were doing tremendously well even though they agreed that there was still room for improvement if they had access to more ICT facilities and frequent training programs.

7.3.4   Challenges experienced by librarians and patrons in the use of ICTs

Findings from the study revealed that there were several challenges facing patrons and librarians in the effective adoption and utilisation of ICTs in public libraries in South West Nigeria. They include inadequate funding which was said to be a major challenge; erratic power supply; inadequate training programs; inadequate ICT infrastructure; lack of technical skills; negative attitude towards automation; lack of commitment from the management; unsatisfactory library software; lack of motivation; phobia for automated systems; lack of support from superiors; poor salary package for librarians in public libraries; and lack of policies regulating the use of automated systems.

7.4   Recommendations

Based on the findings of this study, theoretical framework and literature reviewed, the following recommendations are proffered:

7.4.1   The extent of automation of public libraries in South West Nigeria

The first research question of this study sought to know the extent of automation of public libraries in South West Nigeria. Findings showed that the extent of automation was still very low. In addition, the ICT facilities in use were not adequate for the volume of work done in the library. Furthermore, not all library services were automated and for those that were automated, they were either at their initial stages of automation or partially automated.

Recommendation 1: Best practices in automation from within and outside Nigeria should be adopted in the implementation of library automation systems to avoid public libraries use of automated system as though it is a traditional setting.

7.4.2   Factors influencing acceptance and use of ICTs in public libraries in South West Nigeria

The second research question sought to know the factors that influenced the acceptance and use of technology among library patrons and staff of public libraries. It was established that the four major constructs of UTAUT were found to influence the use of ICTs by participants. These constructs are performance expectancy, effort expectancy, social influence and facilitating conditions. Findings also revealed that some facilitating conditions listed in section 7.4.3 were highly important factors that determined use or nonuse of ICTs.

Recommendation 2: Facilitating conditions that encourage the continual use of automated systems should be promoted by the management of public libraries. These include training of human resources, availing most recent technologies including broadband Internet access, providing backup for power supply, requisite infrastructure, and top management support. This would encourage the continual use of automated systems by both librarians and patrons.

7.4.3   Skills and competencies that librarians and patrons possess in the use of ICTs

Findings from the third research question which sought the skills and competencies of librarians and patrons revealed that library patrons and librarians were competent in the use of ICTs. Findings further revealed that the level of competency differed. Librarians admitted that there was room for improvement if necessary ICTs and access to training programs were in place.

Recommendation 3: Capacity building programmes to equip staff and patrons with requisite skills to use library automated software must be put in place by the management to enable librarians and patrons gain skills to optimise the effective use of the automated systems.

Recommendation 4: The recruitment process of library staff should emphasise possession of ICT skills as part of the requirement to be hired.

7.4.4   Challenges experienced by librarians and patrons in the use of ICTs

As presented in section 5.26, inadequate funding; erratic power supply; inadequate training programs; inadequate ICT infrastructure; lack of technical skills; negative attitude towards automation; lack of commitment from the management; unsatisfactory library software; lack of motivation; phobia for automated systems; and lack of policies among others were the challenges hindering effective use of ICTs in public libraries.

Recommendation 5: Creating awareness about the need for the state and stakeholders of the respective libraries to provide adequate budgets to ensure full automation of the public libraries' services so that they can deliver real-time information services.

Recommendation 6: Relevant ICT policies that will guide the adoption and use of automated systems in public libraries should be developed and implemented to ensure effective use of the automated systems.

Recommendation 7: Solar energy, inverters, stand-by power plants should be implemented as backups to the main electricity supply system to avoid power cut in the system which could lead to the library not being able to fulfil its information delivery services.

7.5   Contributions to Knowledge

The findings of the study provide a better understanding of the factors that influence the adoption and use of automated systems in a public library context. In addition, the study serves as an addition to existing works on adoption and use of technology in a developing country setting. In terms of policy, the results of the study revealed that stakeholders and management of public libraries need to develop policies that would guide them in the adoption and use of ICTs in public libraries. Stakeholders and management of public libraries in Nigeria may find the result of this study beneficial in developing policies that will support the full implementation of automation in public libraries in Nigeria.

With regard to practice, the study contributes to practice by revealing the actual state of automation of public libraries and the factors that influence the adoption and use of automated systems by patrons and librarians in public libraries in South West Nigeria. The study found that performance expectancy, effort expectancy, social influence and facilitating conditions determined the use or disuse of automated systems. These findings can be used for the proper implementation of automated systems in public libraries. In addition, the findings may be useful to professional bodies such as Nigerian Library Association (NLA) or the Librarians Registration Council of Nigeria (LRCN) on making policies that will guide librarianship as a profession.

In terms of methodology, the study adopted a mixed method approach to investigate the extent of automation of public libraries. Both qualitative and quantitative methods were adopted for data collection. The use of mixed method added depth to the research and enabled the researcher to detect feebleness of quantitative method and vice versa. Most studies of this nature carried out in Nigeria adopted either a qualitative or quantitative method (Emojorho, 2011; Eze, 2012a; Krubu & Osawaru, 2011; Ani, Esin & Edem, 2005; Gbadamosi, 2011).

Theoretically, this study provides additional insight into the adoption and use of technology in public libraries in a developing country. It also validates the use of UTAUT has an underpinning theory for studies on technology acceptance and use.

7.6   Originality of the study

The study investigated the extent of automation of public libraries in South West Nigeria. The study covered the extent of automation, factors influencing the adoption of automated systems, skills and competencies of library patrons and librarians and the challenges that participants experienced in the adoption of automated systems. Literature reviewed showed that despite the fact that there are studies on automation of libraries in Nigeria, most of these studies focused on academic and special libraries. For the few studies on automation of public libraries, the extent of automation is unknown (Emojorho, 2011; Jibril, 2013). This study increases the level of awareness on the extent of automation of public libraries in South West Nigeria.

The present study is significant in the sense that it contributes to academic research and literature on the extent of automation of public libraries in a developing country perspective.

7.7   Limitations and suggestions for further studies

The present study investigated the extent of automation of public libraries in South West Nigeria. Nigeria is made up of six geo-political zones; the study was limited to only South West Nigeria which is one of the zones. It is suggested that similar research should be conducted in other geopolitical zones of Nigeria. The study was also limited to only three states out of the six states that make up South West Nigeria. It is recommended that further studies be conducted in the other three states that were not part of the study.

Furthermore, the study was conducted in the headquarters of public libraries in each state usually referred to as the library board. Branch libraries were not included in the study. It is recommended that further studies be extended to the various branch libraries spread across the states.

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Appendix I: Questionnaire for Library Patrons

I am Olateju, Adeleke a PhD candidate in Information Studies at the University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. I am conducting this study as part of the requirements for a doctoral degree. The purpose of the study is to investigate the extent of automation of public libraries in South West Nigeria.

The questionnaire should take no longer than 10-15 minutes to complete. The questionnaire will not require any personal identification and information solicited will only be used for the purpose of the research. I will be very grateful if you would endeavour to answer them. Thank you in anticipation.

Olateju Adeleke.

Demographic Data

1. Name of Library: …………………………………………………….

2. What is your Gender? [ ] Male [ ] Female

3. What is your age range?
[ ] 18-25   [ ] 26-33 [ ] 34-41 [ ] 42-49 [ ] 50-57 [ ] 58-65 [ ] 66 and above

4. What is your Highest Qualification?
  [ ] SSCE [ ] NCE [ ] Diploma [ ] Degree [ ] Masters [ ] Doctoral degree
Others, please specify………………………..

5. How long have you been a user of the library:
[ ] 1-5years [ ] 6-10years [ ] 11-15years [ ] 16-20years [ ] 21-25years [ ] 25years and above

Extent of Automation

6. Which of the services tabulated below has been automated by the library?

Please tick as many as are applicable.

S/N	Services	
6a.	Current Awareness	
6b.	Serials Control	
6c.	Selective dissemination of information	
6d.	Inter-Library Loan	
6e.	Online Renewals	
6f.	Circulation i.e. charging and discharging	
6g.	User Education	
6h.	Library Registration	
6i	Public Access	
6j	Reference Services	

ICT TOOLS USED IN THE PROVISION AND MANAGEMENT OF INFORMATION SERVICES?
7) Which of these facilities does the library possess? Please tick as many as are applicable.

S/N	FACILITIES	
a.	Desktop Computers	
b.	Laptop	
c.	Scanners	
d.	Projectors	
e.	Digital Camera	
f.	Printers	
g.	Audio Visual Equipment	
h.	Barcode Reader	
i.	Fax Machine	
j.	Mobile Phone	
k.	Smart Phone	
l.	Internet	
m.	Video conferencing	
n.	Photocopying Machine	

8) How often do you use the facilities ticked above? Using the Scale of Daily, Weekly, Monthly, Quarterly, Bi-Annually or Annually. Please tick as appropriate.

S/N	Facilities/ICTs	Daily	Weekly	Monthly	Quarterly	Bi-Annually	Annually
a.	Desktop Computers						
b.	Laptop						
c.	Scanners						
d.	Projectors						
e.	Digital Camera						
f.	Printers						
g.	Audio Visual Equipment						
h.	Barcode Reader						
i.	Fax Machine						
j.	Mobile Phone						
k.	Smart Phone						
l.	Internet						
m.	Video conferencing						
n.	Photocopying Machine						

9) The use of the following ICTs has enhanced my use of the library to a large extent.
Using the scale SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly disagree and NAD=Neither
 Agree nor disagree. (Please tick as appropriate)

S/N	ICTs	SA	A	D	SD	NAD
a	Desktop Computers					
b	Laptop					
c	Scanners					
d	Projectors					
e	Digital Camera					

f	Printers					
g	Audio Visual Equipment					
h	Barcode Reader					
i	Fax Machine					
j	Mobile Phone					
k	Smart Phone					
l	Internet					
m	Video conferencing					
n	Photocopying Machine					

SKILLS AND COMPETENCY

10). How can you rate your level of ICT proficiency in the use of the following?
Using the scale NS= Not skilled at all, LL= Low level of skill, AL= Average level of skill,
HL= High level of skill, EL= Excellent level of skill.

S/N	ICTs	NS	LL	AL	HL	EL
a	The use of desktop Computers					
b	The use of laptop					
c	The use of scanners					
d	The use of Projectors					
e	The use of digital cameras					
f	The use of printers					
g	The use of audio-visual equipment					
h	The use of barcode reader					
i	The use of fax machine					
j	The use of mobile phone					
k	The use of smartphone					
l	The use of the Internet					
m	The use of Photocopying Machine					
n	Access to the libraries Online Public Access Catalogue (OPAC)					
o	The use of social media					
p	Searching various library databases					

11. How did you learn to use any of the ICT tools listed in Number 7 above
(Please tick as appropriate)

S/N	Method of acquiring knowledge of ICT tools	
1.	Through assistance from fellow library patrons.	
2.	Through my personal efforts.	
3.	Through knowledge gained at workshops, conferences, and seminars organised by library management	
4.	Through the instruction manuals made available by various manufacturers.	
5.	Through the systems librarian/ cyber-librarian/ ICT staff.	

12). I find the use of ICTs very convenient. Using the scale SA=Strongly Agree, A=Agree, D=Disagree,
SD=Strongly disagree and NAD= Neither Agree Nor Disagree (Please tick as appropriate)

S/N	ICTs	SA	A	D	SD	NAD
a.	Desktop Computers					
b.	Laptop					
c.	Scanners					
d.	Projectors					
e.	Digital Camera					
f.	Printers					
g.	Audio Visual Equipment					
h.	Barcode Reader					
i.	Fax Machine					
j.	Mobile Phone					
k.	Smart Phone					
l.	Internet					
m.	Video conferencing					
n.	Photocopying Machine					

13) Which of the following ICT skills do you think is vital as a library patron?

Using the scale SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly disagree and NAD= Neither

Agree Nor Disagree. Please tick as appropriate.

SN	Vital ICT skills	SA	A	D	SD	NAD
a.	The use of Internet and WWW					
b.	The use of Social media					
c.	The use of Word processing					
d.	The use of Microsoft Excel					
e.	The use of E-mail					
f.	Online searching					
g.	Programming					
h.	Knowledge of computer hardware					
i.	The using smartphones					
j.	The use of PowerPoint					
k	The use of Online Public Access Catalogue (OPAC)					
l	Access to databases					

14) What training programs do you receive from the library? And how often does this take place?

Using the Scale of Daily, Weekly, Monthly, Quarterly, Bi-Annually or Annually. Please tick as appropriate.

SN	Training Programs	Daily	Weekly	Monthly	Quarterly	Bi-Annually	Annually
a.	The use of Internet						
b.	The use of social media						
c.	The use of word processing						
d.	The use of Microsoft excel						
e.	The use of e-mail						

f.	Online searching						
g.	Programming						
h.	Knowledge of computer hardware						
i.	The use of smartphones						
j.	The use of power point						
k	The use of Online Public Access Catalogue (OPAC)						
l	Access to databases						

Factors that influence ICT use by patrons.

15). What are the factors that influence your use of ICTs? Using the scale SA=Strongly Agree, A=Agree,

D=Disagree, SD=Strongly disagree and NAD= Neither Agree Nor Disagree

Performance Expectancy (PE) Perceived Usefulness	SD	D	SA	A	NAD
a. Automated systems are useful in retrieving information materials.					
b. The use of automated systems aids in accessing materials faster.					
c. The use of ICTs enables me to carry out research effectively.					
d. The use of ICTs keeps me updated on new trends in my discipline.					
e. The use of automated systems increases my productivity.					
f. The use of ICTs makes my studies more interesting.					
g. The application of ICTs improves the quality of library services I enjoy.					
16) Effort Expectancy (EE) Perceived Ease of Use					
a. It is easy to interact with ICT facilities such as computers, printers, scanners etc.					
b. It is easy doing my assignments by applying ICTs.					
c. The use of Internet, websites, emailing is very easy.					
d. The use of ICTs requires a specialised skill.					
17) Social Influence					
a. Persons who are significant to me believe that I should use ICTs in my day to day activities.					
b. Colleagues in the library have been supportive in my use of ICTs.					
c. In general, the library management supports the use of ICTs in the library.					
18) Facilitating Conditions					
a. I have the resources necessary to use ICTs for my research.					
b. I have the knowledge required to use ICTs					
c. The systems librarian or other capable staff are always available for assistance with difficulties in using ICTs					

Challenges encountered in adoption and use of automated systems.

19) Kindly indicate the challenges or obstacles you encounter in the use of automated systems.
Please tick as appropriate

S/N	INHIBITORS	
a.	Inadequate funding	
b.	Lack of technical skills	
c.	Absence of training programs	
d.	Negative attitude towards automation	
e.	Erratic power supply	
f.	Unsatisfactory library software	
g.	Inadequate ICT infrastructure	
h.	Lack of commitment from the management	

Thank you for completing this survey!

However, if there are any questions or comment, you can contact the researcher at
tejfadipe@yahoo.com.

APPENDIX 2:

Focus Group Discussion Schedule for Librarians

FOCUS GROUP DISCUSSION SCHEDULE ON AN INVESTIGATION OF THE EXTENT OF

AUTOMATION OF PUBLIC LIBRARIES IN SOUTH WEST NIGERIA.

Thank you for choosing to be a part of this survey for a PhD study on the extent of automation of public libraries in South West Nigeria. All information provided will be used only for educational purposes and will not be disclosed to third parties.

Demographic Data

1. Name of Library: …………………………………………………….

2. Gender of Participant [ ] Male [ ] Female

3. Age range of participant [ ] 18-25   [ ] 26-33 [ ] 34-41 [ ] 42-49 [ ] 50-57 [ ] 58-65 [ ] 66 and above

4. Highest Qualification of Participant

  [ ] SSCE [ ] NCE [ ] Diploma [ ] Degree [ ] Masters [ ] Doctoral degree. Others, please specify

………………………..

5. What is your designation?

5. Years of Experience.

[ ] 1-5years [ ] 6-10years [ ] 11-15years [ ] 16-20years [ ] 21-25years [ ] 25years

6. Please name the services that have been automated in the library?
7. What is the level of automation of the following? It could either be at the initial stage, partially automated, fully automated, not automated at all and undecided.
a. Interlibrary loan
b. New Arrival Awareness
c. User Education
d. Serials Control
e. Selective Dissemination of information
f. Library Administration
g. Report Generation
h. Stock Verification
i. Cataloguing
j. Collection Development.
 8. Please mention the ICT facilities available in this library?

9. Many public libraries have adopted ICTs in their operations. How can you rate the level of adoption in this library?

10. What is the influence of automation on the performance of your roles?

11. What roles do you play in enhancing the use of information communication technologies among your clients?

12. How can you rate staff/patron level of competency in the use of ICTs?

13. What type of training programs does the library have in place for library staff/patrons and how often does this take place?

14. Which of the Library Software's has the Library adopted?

15. What are the factors that influence your use of ICTs?

16. What challenges is the library facing in the adoption of ICTs?

17. How do you think these challenges can be resolved?

18. Additional Comments.

ADELEKE, O.A

APPENDIX 3: Informed Consent Letter

Information Studies
School of Social Sciences
University of KwaZulu-Natal
Pietermaritzburg Campus
Private Bag X01
Scottsville 3209
South Africa
Telephone: 033-260-6286
tejfadipe@yahoo.com
12th October, 2015

Dear Respondent

Informed Consent Letter

Researcher: Olateju Abayomi Adeleke
Institution; University of KwaZulu-Natal
Telephone number: 0610021205, 0734378201
Email address: tejfadipe@yahoo.com

Supervisor: Prof/Dr/Mr: Prof S Mutula
Institution: University of KwaZulu-Natal
Telephone number: 033-260 5093
Email address: mutulas@ukzn.ac.za

I, Olateju Abayomi Adeleke, of the University of KwaZulu-Natal, kindly invite you to participate in the research project entitled "An Investigation of the extent of Automation of Public Libraries in South West Nigeria."

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, School of Social Science.

The aim of this study is to investigate the extent of Automation of Public Libraries in South West Nigeria.

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of

records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact me or my supervisor using the numbers indicated above.

It should take you about 15 minutes to complete the questionnaire.

Thank you for participating in this research project.

12ᵗʰ October 2015

Signature   Date

I .... hereby consent to participate in the above study.

Name: .... Date: .... Signature: ....

Supervisor's details
Proffessor S. Mutula
School of Social Sciences
University of KwaZulu Natal
mutulas@ukzn.ac.za

Student's details
Olateju Abayomi Adeleke
Department of Information Studies

School of Social Sciences
University of Kwazulu Natal
tejfadipe@yahoo.com

APPENDIX 4: Letter of Introduction to Lagos State

The State Librarian,

Lagos State Library Board,

Lagos State,

Nigeria.

April, 17th, 2015

RE: Introducing Mrs Olateju ADELEKE a PhD Student at the University of KwaZulu- Natal

This letter serves to introduce and confirm that Mrs Adeleke is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is 'An investigation of the extent of automation of public libraries in South West Nigeria'. The outcome of the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree, she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mrs Adeleke permission to carry out research in your organisation. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Program Coordinator)

Dean & Head: School of Social Sciences

APPENDIX 5: Letter of Introduction to Ogun State

The State Librarian,

Ogun State Library Board,

Kuto, Abeokuta South,

Ogun State,

Nigeria

17th April 2015.

RE: Introducing Mrs Olateju ADELEKE a PhD Student at the University of KwaZulu- Natal

This letter serves to introduce and confirm that Mrs Adeleke is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "An Investigation of the extent of Automation of Public Libraries in South West Nigeria".

The outcome of the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree, she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mrs Adeleke permission to carry out research in your organisation. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding.

Prof Stephen Mutula

PhD (Information Studies Program Coordinator)

Dean & Head: School of Social Sciences

APPENDIX 6: Letter of Introduction to Oyo State

The State Librarian,

Oyo State Library Board,

Dugbe, Ibadan,

Oyo State,

Nigeria.

April, 17th, 2015

RE: Introducing Mrs Adeleke, Olateju a PhD Student at the University of KwaZulu- Natal

This letter serves to introduce and confirm that Mrs Adeleke is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is 'An investigation of the extent of automation of public libraries in South West Nigeria'. The outcome of the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree, she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mrs Adeleke permission to carry out research in your organisation. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Program Coordinator)

Dean & Head: School of Social Sciences

APPENDIX 7: Ethical Clearance

UNIVERSITY OF ™
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

18 December 2015

Mrs Olateju Abayomi Adeleke (213571443)
School of Social Sciences
Pietermaritzburg Campus

Dear Mrs Adeleke,

Protocol reference number: HSS/1558/015D
Project title: An investigation of the extent of Automation of Public Libraries in South-West, Nigeria

Full Approval – Expedited Application
In response to your application received on 23 October 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL.**
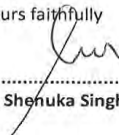
Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

....
Dr Shenuka Singh (Chair)

/ms

Supervisor: Professor Stephen Mutula
Academic Leader Research: Prof Sabine Marschall
School Administrator: Ms Nancy Mudau

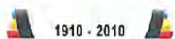Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609   Email: ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
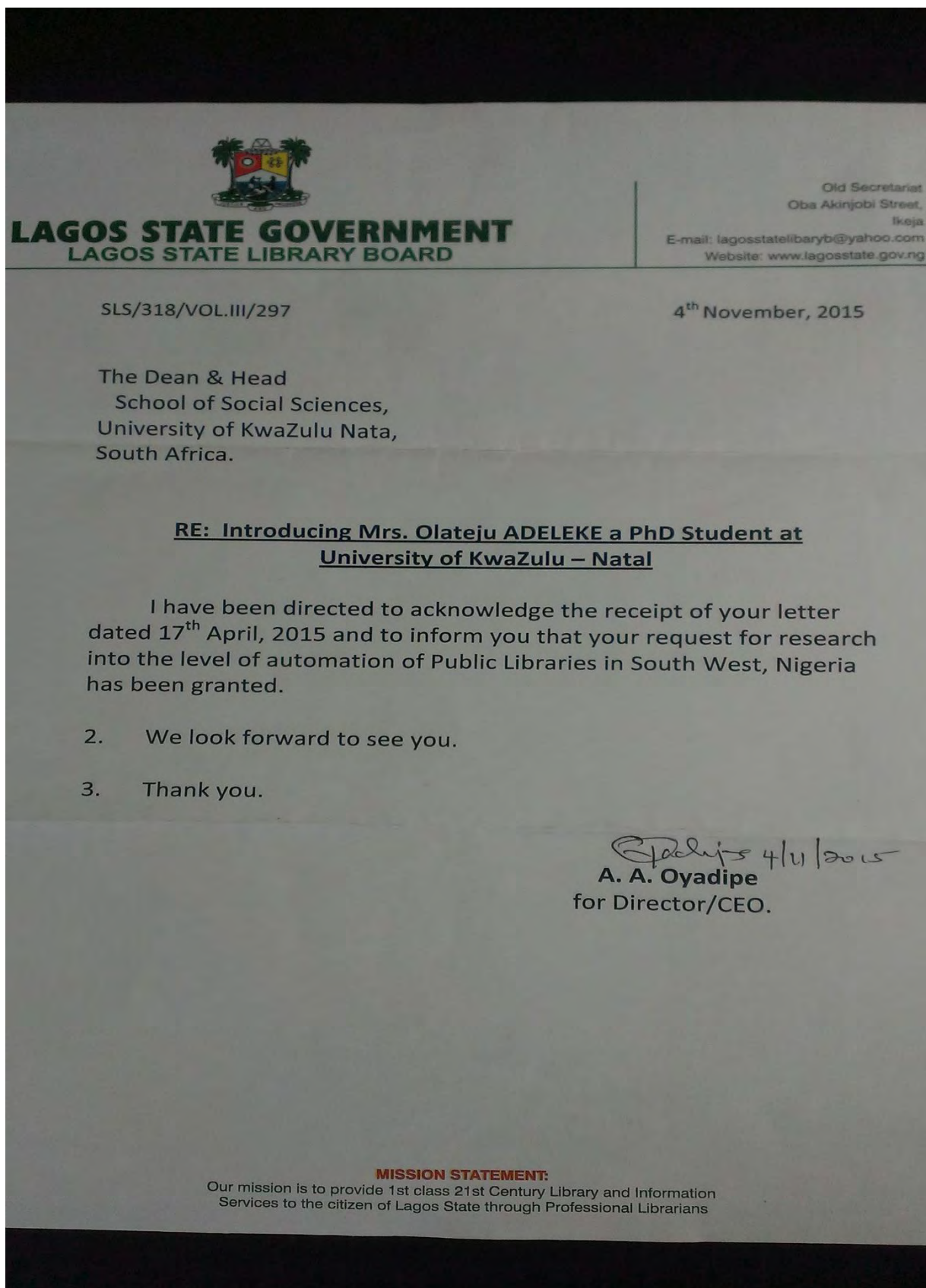Website: www.ukzn.ac.za

1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE
Founding Campuses   ■ Edgewood   ■ Howard College   ■ Medical School   ■ Pietermaritzburg   ■ Westville

APPENDIX 8: Approval to carry out research at Ikeja Old Secretariat Library (IOSL)

LAGOS STATE GOVERNMENT
LAGOS STATE LIBRARY BOARD

Old Secretariat
Oba Akinjobi Street,
Ikeja
E-mail: lagosstatelibaryb@yahoo.com
Website: www.lagosstate.gov.ng

SLS/318/VOL.III/297

4th November, 2015

The Dean & Head
School of Social Sciences,
University of KwaZulu Nata,
South Africa.

**RE: Introducing Mrs. Olateju ADELEKE a PhD Student at
University of KwaZulu – Natal**

I have been directed to acknowledge the receipt of your letter dated 17th April, 2015 and to inform you that your request for research into the level of automation of Public Libraries in South West, Nigeria has been granted.

2.   We look forward to see you.

3.   Thank you.

A. A. Oyadipe
for Director/CEO.

MISSION STATEMENT:
Our mission is to provide 1st class 21st Century Library and Information
Services to the citizen of Lagos State through Professional Librarians

APPENDIX 9: Approval to carry out Research at Ogun State Library Board (Simeon Adebo Library)

The Dean and head
School of Social Sciences
University of Kwazulu-Natal

Sir,

RE: INTRODUCING MRS. OLATEJU ADELEKE A PHD STUDENT AT UNIVERSITY OF KWAZULU-NATAL

I write to state that Mrs. Olateju Adeleke a Phd student on information studies in your prestigious University – University of Kwazulu-Natal, has been accepted to carry out her research "An investigation into the level of Automation of Public Libraries in South West, Nigeria in Ogun State Library services.

Again, I write to assure you that Mrs. Olateju Adeleke will be given necessary support that will make her research project a very rewarding endeavour.

Thank you.

....
Lateef Adebola Benson
Director, Ogun State Library Services

APPENDIX 10: Approval to carry out Research at Oyo State Library Board.

OYO STATE LIBRARY BOARD

PMB 5082, DUGBE, IBADAN

OYO STATE: THE PACESETTER

Telephone: (234) +8055250247

E-mail: oyslb@yahoo.com

Your Ref. No ....
All communication on this matter
should be addressed to the State Librarian quoting

Our Ref. No LIB/GEN.10/196

Date 12th May, 2015

The Dean,
School of Social Sciences,
University of Kwazulu-Natal,
Private Bag X01, Scottville, 3209,
South Africa.

RE: Introducing Mrs. Adeleke, Olateju, a Phd at University of KwaZulu-Natal

Sequel to your letter of April 17th, 2015 introducing Mrs. Adeleke Olateju as a student of your university. I am directed to inform your esteemed institution of our Board's willingness to allow your student to carry out her research work. She will be accorded all the necessary cooperation she will need when undertaking her research here.

2   Thank you.

A.I. Akinlolu (Mrs.)
State Librarian

APPENDIX 11: EDITOR'S REPORT

30 January 2017

TO WHOM IT MAY CONCERN

This is to confirm that I assisted Mrs Olateju Abayomi Adeleke with the language editing of her thesis 'An Investigation of the Extent of Automation of Public Libraries in South West Nigeria'. I went through the entire draft making corrections and suggestions with respect predominantly to language usage and punctuation.

Mrs Barbara L. Mutula-Kabange

BEd(UBotswana), BSocScHons, MEd(UKZN)

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Tel: +27 786 439 029