Information and Communication Technology Skills on Knowledge Sharing among Librarians in Federal University Libraries in South-West, Nigeria

Ganiyu Oluwaseyi Quadri

B.Ed., MLIS (Ibadan, Nigeria)

Student Number: 216015523

Submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Information Studies) in the School of Social Sciences, College of Humanities, University of KwaZulu-Natal, Pietermaritzburg, South Africa

Supervisor: Dr. Francis Garaba

Submitted: October 2019

DECLARATION

I, Ganiyu Oluwaseyi Quadri declare that:

i) The research reported in this thesis, except where otherwise indicated, is my original work;

ii) This thesis has not been submitted for any degree or examination at any other university;

iii) This dissertation does not contain other persons' data, pictures, graphs or other information unless specifically acknowledged as being sourced from other persons;

iv) This thesis does not contain other persons' writing unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:

   a. their words have been re-written but the general information attributed to them has been referenced;

   b. where their exact words have been used, their writing has been placed inside quotation marks, and referenced;

v) Where I have reproduced a publication of which I am an author, co-author or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications;

vi) This thesis does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation and in the references section.

Signature Date: 25th October 2019

Ganiyu Oluwaseyi Quadri

Supervisor

Date: 25th October 2019

Dr. Francis Garaba

ABSTRACT

The purpose of this study was to investigate the influence of Information and Communication Technology skills on knowledge sharing among librarians in Federal university libraries in South-West Nigeria. The study was based on post-positivism research paradigm with survey research design. The Unified Theory of Acceptance and Use of Technology (UTAUT) model was employed as the theoretical lens underpinning the study. The target population consisted of all the librarians in the six federal university libraries in South-West Nigeria (Federal University of Abeokuta; Federal University Akure; Federal University Oye; University of Ibadan; University of Lagos and Obafemi Awolowo University). Survey questionnaires and semi-structured interviews were used as means of data collection. Mixed methods research approach of the embedded type was adopted in this study. The quantitative data collected were analysed using SPSS while the qualitative data obtained were analysed using thematic content analysis. The validity and reliability of the instrument was pre-tested through Cronbach alpha (α) and the value obtained was r = 0.93.

The findings showed that more than half of the respondents perceived their ICT skills to be medium while only 2% acknowledged their level of ICT skills is poor. The findings also revealed that a large proportion of the respondents indicated excellent in ICT skills level. The majority of the respondents attested that ICT skills influence knowledge sharing positively and that both traditional and technological methods were used for knowledge sharing. The study showed that most respondents possessed high level of knowledge sharing and thus shared knowledge on daily basis. The findings further revealed that effort expectancy, performance expectancy, social influence and facilitating condition of UTAUT positively influenced the librarians' level of knowledge sharing. A weak correlation was reported between knowledge sharing and educational qualification of respondents while other moderating variables had no correlation.

The study concluded that majority of the respondents possessed moderate level of ICT skills and shared knowledge amongst themselves. Also, librarians acknowledged that ICT has helped to promote knowledge-sharing, facilitate dissemination of knowledge to wider audience, enhance knowledge sharing and solve existing knowledge sharing issues, among others. The study, therefore, recommended that library management should consider enhancing reward/incentives system for sharing knowledge. There is also the need to develop a functional knowledge management policy to guide and improve efficient knowledge sharing practices among the librarians.

ACKNOWLEDGEMENTS

I thank the Almighty God who made it possible for me to embark on this doctoral degree journey and to him alone be the glory.

My sincere appreciation goes to my supervisor, Dr. Francis Garaba for his constructive criticism, guidance, support, encourgement and for believing in my ability. I say thank you Sir. I also show my gratitude to the University of Ibadan particularly the management of Kenneth Dike Library for granting me a study leave and sponsoring my study through the NEEDS ASSESSMENT fund. I appreciate the chairman Academic Staff Union of Nigerian Universities (University of Ibadan Chapter), Prof. Deji Omole and the Director of Academic Planning Unit, Prof. Victor Okoruwa for their effort in helping me with accessing the funds. A big thank you goes to Jamaltu-Ulama of Church Street, Pietermaritzburg who came to my assistance during financial crisis. I also appreciate the former University Librarian, Dr. B.A. Oladele and the present librarian - Dr. (Mrs) Komolafe-Opadeji for their kind support while I was away from the office. I cannot thank you enough, but I believe only God can reward you. My sincere appreciation goes to all members of staff both academic and non-academic at the Kenneth Dike Library, University of Ibadan who supported me in one way or the other in this journey.

I would like to express appreciation to the librarians of the Federal University of Agriculture, Abeokuta; Federal University of Technology, Akure; Federal University Oye; University of Ibadan; University of Lagos and Obafemi Awolowo University. I specially thank the University Librarians who created time out of their tight schedule to assist in providing useful information for the successful completion of this research. I am also grateful to Dr. Alabi, Mr. Oni, Mr. Mudashiru, Mrs. Akinyede, Dr. Owolabi and Mrs. Kayode for their assistance in obtaining gate-keeper's letters (permission) from the six federal universities in South-West Nigeria. In addition, many thanks go to Ms. Nancy Mudau and all faculty members and staff of the College of Humanities, School of Social Sciences, University of KwaZulu-Natal (Pietermaritzburg Campus).

Special thanks go to Dr. Okite-Amugboro, Dr. Tamuno and Dr. Adeleke, who are senior colleagues and whose words of encouragement in all ramifications were priceless. I want to say a big thank you to Sam, Muyiwa (my landlord), Kristi, Tope, Fela, Bimpe, AY, Mr. Gideon, Dr. Nwone, Dr. Ajanaku, Dr. Bakare, Dr. Olasina, Dr. Ekwealor, Dr. Adeogun, Dr. Omololu, Dr. Odede, Dr. Medoye, Dr. Jumbo, Mrs. Cholloms, Njideka, Abule, Adamu, Emmanuel, Pastor Osas, Larry, Mr. Mathew, you all made my stay in South Africa a memorable one. I want to specially thank Mr.

Jacob Kutu and Dr. Adebayo Kutu who helped with SAQA evaluation and admission process; Dr. Adebayo Adegbore who assisted in the data analysis; Dr. Sunday Adesina who edited the thesis, Engr. Ayoade Adeniji (AD) who supported my Visa application and Mr. Femi Idowu whose effort is priceless. I also appreciate the input of my mentor Prof. Abiodun Salawu of Northwest University, Prof. Bangura of Howard University and CODESRIA.

I say a big thank you to my wife, Latifat Omobolanle for her unflinching support, encouragement, and love. To our amiable children Abdul-Fattah Ayomide and Muslimat Iremide who could not get the fatherly care they needed, God bless you. Daddy loves you. I am indebted to my parents Alhaji and Alhaja Abdul-Fattah and Risikat Ogunbosin for their prayers for my safety in South Africa. Daddy, the Dr. you intended to call has finally come to reality. I know you are happy and proud of me. To my siblings: Mrs. Toyin Dauda, Mrs. Modupe Oladejo, Mr. Omotayo Quadri, Babawale Quadri, Oluwaseun Quadri and to my nephews and nieces. You all rock, I love you all. To my in-laws, thank you all for your prayers and support.

To all others whom I have failed to mention but in one way or the other contributed to the completion of this PhD, I say a big thank you.

DEDICATION

This thesis is dedicated to the Almighty God who preserved, strenghten and inspired me and to my wife (Latifat Omobolanle Quadri) and children (Abdul-Fattah Ayomide and Muslimat Iremide Quadri).

TABLE OF CONTENTS

List of Appendices

List of Figures

List of Tables

List of Acronyms

AGORA	Access to Global Online Research on Agriculture
CARL	Canadian Association of Research Libraries
CAS	Current Awareness Services
CD-ROM	Compact Disk- Read Only Memory
CODESRIA	Council for the Development of Social Science Research in Africa
C-TPB-TAM	Combined Theory of Planned Behaviour and Technology Acceptance Model
DOI	Diffusion of Innovation Theory
EE	Effort Expectancy
EIRs	Electronic Information Resources
FC	Facilitating Condition
FCT	Federal Capital Territory
FUNAAB	Federal University of Agriculture, Abeokuta
FUOYE	Federal University Oye
FUTA	Federal University of Technology, Akure
GLAS	Graphical Library Automation System
HINARI	Health InterNetwork Access to Research Initiative
IBM	International Business Machine
ICT	Information and Communication Technology
IFLA	International Federation of Library Association
IT	Information Technology
KDL	Kenneth Dike Library
KM	Knowledge Management
KS	Knowledge Sharing
LAN	Local Area Network
LIB	Library
LIS	Library and Information Science
LRCN	Librarian Registration Council of Nigeria
MGECW	Ministry of Gender Equality and Child Welfare
MIS	Management Information Systems
MLA	Medical Library Association
MT	Motivation Theory

MPCU	Model of Personal Computer Utilisation
MS	Microsoft
NLA	Nigerian Library Association
NLI	National Library of Indonesia
NLN	National Library of Nigeria
NLOF	Nigerian Library Online Forum
NUC	Nigerian University Commission
OARE	Online Access to Research in the Environment
OAU	Obafemi Awolowo University
OCLC	Online Catalogue Library of Congress
OPAC	Online Public Access Catalogue
OS	Operating System
PC	Personal Computer
PE	Performance Expectancy
PPMC	Pearson Product Moment Correlation
RSS	Rich Site Summary
SET	Social Exchange Theory
SAQA	South African Qualifications Authority
SCT	Social Congnitive Theory
SDI	Selective Dissemination of Information
SI	Social Influence
SMES	Small and Medium Sized Enterprises
SMT	Social Media Tool
SNS	Social Networking Site
SPSS	Statistical Package for the Social Sciences
SQU	Sultan Qaboos University
TA	Thematic Analysis
TAM	Technology Acceptance Model
TEEAL	The Essential Electronic Agricultural Library
TINLIB	The Information Navigator Library
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action

TRB	Theory of Reasoned Behaviour
UI	University of Ibadan
UK	United Kingdom
UKZN	University of KwaZulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNILAG	University of Lagos
USA	United States of America
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The purpose of this study was to investigate the influence of ICT skills on knowledge sharing among librarians in South-West Nigeria. Therefore, this study is important in informing professional librarians on the opportunity brought by ICT as well as acquiring required and adequate skills to maximally utilise ICT tools particularly on knowledge sharing. Globally, the role ICT plays on knowledge sharing cannot be overemphasized. The benefits and capabilities of ICT have transformed the development opportunities that lower the operational efforts required for establishing the foundation for sustainable development and extremely accelerate enhanced productivity improvement afterwards (Detschew 2007:8). The successful exploitation of ICTs usage needs complementary efforts to build up a stock of human capital such as in the practices of human resources management as well as organisational culture and structure, for embracing and adopting new knowledge of technologies (Detschew 2007:11).

The evolution of ICT can be traced to late 1960's when the Arpanet was initiated and funded by USA Defence Department (Deb 2014:25). Succeeding this, the ICT sector has grown to its present shape where it now plays a dominant role in every sphere of human endeavour and making revolutionary changes in information and knowledge gathering, sharing, disseminating as well as in global communication (Deb 2014:25). The advent of the first modern digital computers in the 1940s has revolutionised computerisation to penetrate virtually all spheres of human endeavour. Computer technology is now available and being used in businesses, industries, universities, schools and individual homes. Thus, computer networks exist to present users with ways of transferring and communicating information and knowledge electronically. Therefore, the utilisation of technology, particularly the Internet has transformed access to knowledge and information for education, business, libraries and individuals (Ogunsola and Aboyade 2005:8).

The development and utilisation of ICT in Nigerian university libraries has been a slowly evolving process which involved many successes and failures in the past decades. The history of this process has been marred by the challenges that many university libraries face such as inadequate

infrastructure, lack of funding, lack of leadership and training of capacity building (Speirs 2010). The importance of ICT in knowledge management cannot be underestimated in the current knowledge economy (Enakrire and Ocholla 2017). Prior to the emergence of ICT, the management of knowledge (tacit or explicit) has been hindered by many factors such as the slow nature of library acquisitions and processing functions; librarians being overburdened by the large volume of technical/mechanical work; mechanisms (computer, software) utilised in storage and retrieval; and poor organisational motivation which leads to unwillingness to share knowledge (Enakrire and Ocholla 2017).

The emergence and acceptance of ICTs in libraries and information centres has improved knowledge sharing activities and services delivery in university libraries, particularly in developed countries (Virtanen and Neiminen 2002). Dube and Ngulube (2012:73) hold that knowledge sharing and exchange relies heavily on IT infrastructure for the enablement of knowledge creation, capture, management, dissemination and storage. Anna and Puspitasari (2013) affirmed that knowledge sharing among information professionals including librarians has improved significantly in recent times via ICT. Therefore, it is necessary for librarians in university libraries to adopt and embrace ICT as well as inculcate requisite ICT skills that will foster knowledge sharing and enhance library routines to push beyond the physical wall of the library (Enakrire and Ocholla 2017).

The phrase Information and Communication Technology (ICT) has been used interchangeably with Information Technology (IT). ICT refers to technology which provides access to information through telecommunications (Seena and Pillai 2014).Therefore, for the purpose of this study, the working definition of ICT is given as an "electronic device used for processing and managing information through software and hardware to store, convert, protect, manipulate, manage, transmit, control, disseminate and retrieve information for the improvement, enhancement and productivity of personal, organisational and institutional activities" (Osakwe 2012:39). It is important to note that ICT tools and services are being used more efficiently, especially in libraries to cater for the information needs of library users. In this era of library development, librarians must acquire the adequate ICT skills needed to manage and share knowledge in university libraries. It is expected that librarians acquire ongoing knowledge of ICT skills for sharing knowledge and provision of better service delivery (Umeji, Ejedafiru and Ogheneteha 2013).

Sreenivasulu (2000:13) defines ICT skills as the general competencies (know-how, ability, and knowledge) required to create, analyse, organise, store, retrieve, disseminate, manage, and share information in libraries and information centres. Ugwuanyi (2011:11) also views ICT skills as the ability and competence to use technological devices and applications effectively to share knowledge and work as an individual and in a team. ICT thus encompasses a wide range of fast-developing technologies, such as telephones (smart and android phones), cable, satellite, television (TV), radio, video conferencing, and digital technologies like computers, information networks, the Internet, intranets and software applications (Chisenga 2006). In view of this, it becomes necessary for institutions to formulate good policies to guide the use of ICT in university libraries and standardise the institution's IT infrastructure (Akporhonor and Olise 2015). Opati (2013) maintains that the absence of ICT policies negatively affects the promotion of ICT programs in terms of knowledge sharing in university libraries.

Knowledge sharing is embedded in knowledge management which is the process of knowledge creation, acquisition, transfer, dissemination and sharing, storage, refinement and utilisation (King 2009:4). Therefore, the role of knowledge management in the organisations particularly universities is to operate these processes as well as develop procedures and systems to support them, thus, effective knowledge sharing in university libraries will foster knowledge assets, improved institutional/organisational culture and structure which in turn enhances team work and job performance (King 2009:4). Okonedo and Popoola (2012:2) define knowledge sharing as an activity that involves dissemination of ideas, information and values about the acuity between two parties in order to agree or disagree about a phenomenon. Therefore, for the purpose of this study, the working definition of knowledge sharing is given as an activity through which knowledge, information, skills/expertise is exchanged amongst people, friends, families, communities as well as organizations (Charband and Navimipour 2016:1131), According to Van den Hoof and De Ridder (2004:118), knowledge sharing is the process by which individuals' exchange and share tacit and explicit knowledge as well as create new knowledge. It is therefore pertinent that librarians share knowledge, as it will make them more valuable and productive. Notwithstanding, the ability of librarians to share knowledge with one another and other professional colleagues, knowledge sharing will foster team work and enhance job productivity (Abell and Oxbrow 2001).

The use of ICT for knowledge sharing by librarians is recorded globally (Haliso 2011). A report by the Canadian Association of Research Libraries (CARL 2010) reveals that in the year

2000/2001, university libraries subscribed to 436,731 electronic journals. Librarians are leaders in using technology to transfer and share knowledge, as well as transform traditional library resources and services to meet the challenges of the 21st Century. A study by Virtanen and Neiminen (2002) on ICT use among librarians in Finland, revealed that more than 95% had good ICT skills in word processing and a little more than half could manage some advanced operating system functions. Shahid and Alamgir (2011:11) unified the concepts of ICT, ICT skills as well as knowledge sharing. They also affirmed that ICT is an enabler of knowledge sharing activities; while ICT and related skills can eliminate knowledge sharing barriers in university libraries.

In appraising the African context, Ndakalu (2014), Wawire and Messah (2010:148) pinpoint that not only do university libraries suffer from inadequate funding, poor information infrastructure, ignorance of university administrators on the importance of libraries, lack of cooperation among libraries, and poor communication systems, but librarians also lack ICT skills. Alluding to Botswana as a case in point, Haliso (2011) identified inadequate computerization, infrastructure, and human capacity as the three major challenges to knowledge sharing and ICT use. Nyambi and Maynard (2012) note some challenges faced by librarians in state university libraries in Zimbabwe to include poor internet connectivity, erratic power supply, poor ICT infrastructure, lack of funds, unavailability of hardware and lack of ICT facilities and skills. The preceding presupposes that librarians in African countries are faced with numerous challenges to knowledge sharing and ICT use, which affects their knowledge sharing activities and creates an environment of low job productivity and lack of team work.

Using the case study of Nigeria, Kent (1996) and Anasi, Akpan and Adedokun (2014) in their studies on ICT and knowledge sharing among information professionals, assert that many librarians in Nigerian university libraries lack the ICT skills needed to share knowledge among themselves. In concurring, Akporhonor and Akpojotor (2016) detail that librarians and other information professionals in Nigeria face many challenges, especially when using ICT to share knowledge with postgraduates and library staff. The study reveals poor internet connectivity, erratic power supply, lack of ICT skills, high cost of access to IT facilities, and technophobic attitude of librarians as major challenges inhibiting knowledge sharing. The preceding presupposes a gap which this study intends to fill. Therefore, the present study will investigate the ICT skills on knowledge sharing among librarians in Federal University Libraries in South-West Nigeria. It has been well documented (for example Omar 2012; Pouris and Inglesi-Lotz 2014) that

universities are established specifically for the purpose of teaching, learning and research, where the libraries are to support this mission through knowledge sharing and information dissemination among the stakeholders in the university community. This core mission of the university libraries is discussed in detail in following section.

1.1.1 University libraries and their role in knowledge sharing

The development of libraries in Nigeria can be traced back to the United Nation Educational, Scientific and Cultural Organisation (UNESCO) seminar held in August 1953, at the University College Ibadan. This seminar necessitated the establishment of library in Nigeria in 1950s when the government of the Federal Republic of Nigeria started to encourage and promote library development (Folorunso and Folorunso 2010:304). Ashikuzzaman (2016) categorised libraries as special libraries, public libraries national libraries and academic libraries.

A special library can be described as a library that serves a specific group of people; such a library includes law libraries, medical libraries, military libraries and research library. These are regarded as special libraries because of their collections and their users. As far as public libraries are concerned, it is a library that is accessible, supported and generally funded by the community (either through local, regional/national government, tax money). Public libraries provide access to relevant information and knowledge through a range of resources as well as services and they are equally available free of charge to all members of the community irrespective of educational attainment; race; religion; language; nationality; gender; disability; age; economic and employment status (IFLA 2001; Ashikuzzaman 2016).

A national library is a library that is established by the government of a country in order to serve as a legal deposit of information for that country (Ashikuzzaman 2016). National libraries also serve as a national forum for international projects and programmes. Sometimes, they also serve and provide the information needs of the legislature (IFLA 2017). An academic library is regarded as the library that is attached to academic institutions such as schools, colleges and universities (Ashikuzzaman 2016). The major function of an academic library is to serve the students, researchers, teachers/lecturers and staff of the academic institution. However, the core objective of this library is to cater for information needs of the library users. The author classified academic libraries as school libraries; college libraries; and university libraries.

Similarly, Akporhonor (2005); Ubogu and Okiy (2011) classified libraries particularly academic libraries as university libraries, polytechnic libraries and college libraries. Enakrire and Ochola (2017) submitted that academic libraries are now using ICT to access both digitised and electronic information. The authors further affirmed that the role of automation in academic libraries has facilitated access to information and enhanced operations and services in libraries. University libraries are the forefront in terms of providing relevant and adequate information and services to their clientele and communities (lecturers, students and researchers) to support and enhance teaching, learning and research activities in the university community (Bappah 2011; Omar 2012).

It follows then that the development of university learners is central to the mission and vision of such institutions like academic libraries (Omar 2012). In order to achieve these goals, university libraries have an important role to play in enhancing, promoting and providing relevant information to their clientele, as well as sharing information with the university community at large. However, the primary role of a university library is to contribute and assist towards the realisation of the institution's mission, vision and objectives. Therefore, university libraries are central to satisfying the information needs of the library users' and the university community at large, which in turn boosts the intellectual capital of the nation (Omar 2012).

Nigerian university education originated with the establishment of the Yaba High College by the Colonial Government in 1934. The University College Ibadan was established in 1948 and its name was later changed to the University of Ibadan in 1962. Currently, there are 160 universities in Nigeria, out of which 46 are State-owned (National University Commission 2018a), 74 are Private universities (NUC 2018b), and 40 are run by the Federal government (NUC 2018c). The state-owned universities are managed by the State Government in which the university is located. Private universities are managed and controlled by private individuals and organizations who own such universities, while Federal universities are maintained and managed by the Federal Government of Nigeria. Worth noting here is the fact that all universities in Nigeria have to undergo an accreditation process before becoming operational. Therefore, it is the responsibility of the National Universities Commission (NUC) to oversee this accreditation. In addition, accreditation could be declined if the requirements of the Commission are not met by the prospective university.

Universities worldwide are established to produce highly skilled people who will contribute to the economy and socio-economic growth of the nation, and Nigeria is no exception. The development of socio-economic growth has four major contributors: building on knowledge bases (through knowledge development and research), the formation of human capital, use of knowledge and dissemination (interactions with knowledge users),and knowledge maintenance (format to store and channel of transmitting knowledge) (Pouris and Inglesi-Lotz 2014:1). Anna and Puspitasari (2013:3) underscore that knowledge can be shared in the library if the librarians have knowledge and in addition create new knowledge. In this consideration, the authors maintain that new knowledge could be easily created if the librarians were to share with one another. Knowledge sharing has become an integral part of management policies and the role of library in Surabaya libraries in Indonesia. For instance, the Surabaya libraries initiated one knowledge sharing activity among community of practice, and librarians were no exception. This initiative was founded in the year 2000 and supported by the National Library of Indonesia (NLI) as a place for university libraries to share knowledge and develop good foresighted library (Anna and Puspitasari 2013). Similarly, knowledge sharing among librarians in Nigerian university libraries is not a new initiative (Akparobore 2015). Nigeria as the focus of this study has witnessed significant breakthrough in knowledge sharing through various platforms and media like professional journals and conferences both at the state and national level. This takes us to the context of the study which will be discussed in the next section.

1.1.2 Context of the study

Nigeria is a nation situated on the Western Gold Coast of Africa and sharing boarders with Niger Republic to the Northern part, Chad on the Eastern part and Cameroon on the Southern part of the country. Nigeria has a varied geographical climate that range from dry to humid equatorial (Falola, Kirt-Greene, Ade-Ajayi and Udo 2017). The country has a rich diversity of spoken languages, including Yoruba, Hausa, Fulani, Ibibio, Tiv, Edo and English, just to mention a few. The nation is endowed with abundant natural resources, such as petroleum and natural gas. Formerly, Lagos was Nigeria's capital until 1976, when through the enactment of a new law, the capital was moved to Abuja, making it Federal Capital Territory [FCT] (Falola et. al.2017).

Nigeria as a country practises a federal system and the tiers of government are federal, state, and local governments. This study covered six federal universities in South-West: Federal University

of Agriculture, Abeokuta, Ogun State; Federal University Oye, Oye, Ekiti State; Federal University of Technology, Akure, Ondo State; University of Ibadan, Ibadan, Oyo State; University of Lagos, Lagos State; and Obafemi Awolowo University, Osun State. It is germane to have an in-depth understanding of these six federal universities under study.

Nigeria is divided into six geo-political zones, namely: South-West, South-East, South South, North-West, North-East and North-Central (Abidogun 2012:8). Nigeria comprises thirty-six states, six of which make-up the South-West geopolitical zone: Ekiti, Lagos, Ondo, Ogun, Osun and Oyo. UNESCO (2012) posits that the South-West region has a population of 27,722,432. The South-West zone is purposely chosen for this study because it is regarded as the central hub of educational activities, with the highest number of tertiary institutions.

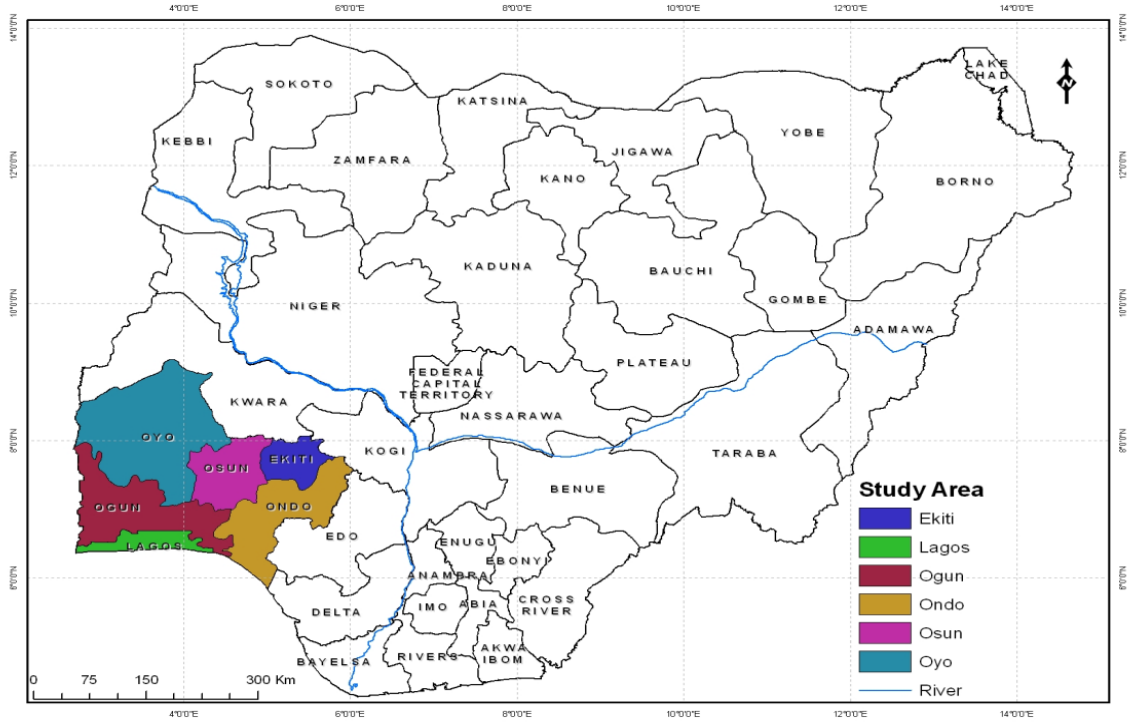


Figure 1.1: Map of Nigeria showing the study area (South-West States) (Source: Falola et al. 2017).

The University of Ibadan (UI) was established in 1948, but its origin can be traced to Yaba College, established in 1932 in Yaba, Lagos, as the first institution for higher of learning in Nigeria. The University of Ibadan has thirteen faculties. The first indigenous Vice-Chancellor of the university was Kenneth Onwuka Dike, after whom the university library (Kenneth Dike

Library) is named (University of Ibadan 2017). The library was established in 1954 and saddled with the responsibility of providing information resources such as books, journal, monographs, reports, electronic materials and so on, to support teaching, learning and research mandates. However, the collections of these libraries have continued to grow over the years to the extent that the total holding of the information resources is estimated at over one million volumes consisting on books, journals, thesis, dissertations, technical reports and monographs which include historical materials such as the African collection. Owing to the global shift from printed information resources to digital ones, the library subscribed to a number of electronic resources databases such as JSTORE, AGORA, HINARI, OARE, PROQUEST to compliment the printed based resources (Kenneth Dike Library 2017).

The University of Lagos (UNILAG) was established in 1962, with two campuses. These include the Akoka, Yaba campus, which is the main; and the College of Medicine, Idi-Araba, which is the satellite campus, consisting of twelve faculties. Both campuses are located in the Mainland area of Lagos state, Nigeria. The establishment of UNILAG was as a result of the Ashby Commission Report and the report of the Advisory Commission of UNESCO for the creation of the university, presented to the Federal Government in September 1960 (Adanma 2016). University of Lagos Library was established 52 years ago, since then, the library has been providing information services to both academic community and users. The library holdings have grown to about 500, 000 volumes of books and 803,025 volumes of journals. The library also holds Africana and government collections as well as rich and sizeable collections of newspapers. The strength of the library is central to the use of ICT as a tool to facilitate information services provision such as references services, circulation services, selective dissemination of information (SDI) and library consortium (University of Lagos Library 2017).

The Federal University of Agriculture, Abeokuta (FUNAAB) was instituted on the 1st of January 1988, alongside the Federal University of Agriculture Makurdi, in Benue State. FUNAAB started from the old Abeokuta Grammar School Campus at Isale-Igbein, in the city of Abeokuta the Ogun State capital with nine colleges in 1997, before moving to its permanent site at Alabata Road, Abeokuta (Federal University of Agriculture, Abeokuta 2017). The pioneer Vice-Chancellor, Professor Nurudeen OlorunNimbe Adedipe was appointed on the same date, and assumed office 28th of January 1988, after whom the university library (Nimbe Adedipe Library) was named. However, the ultra-modern library building has the capacity to accommodate 1000 users at a time.

The total collection of books at present is 75,622 titles. The library's automation programme started in 1994 and was funded by World Bank, an International Business Machine (IBM) computer and TINLIB library management software with four work stations was designed. This was later upgraded to ten work stations (Nimbe Adedipe Library 2017). The library later migrated from TINLIB to Graphical Library Automated System (GLAS) software with the capacity to operate 50 work stations within the library. Currently, the Online Public Access Catalogue (OPAC) is fully running and making online cataloguing possible for users to access information resources within limited time. In order to compliment resources in the library, the university procured two CD-ROM databases in 1998 to enhance information sharing, document delivery and literature search capacity in the library. The CD-ROM databases are The Essential Electronic Agriculture Library (TEEAL), 1993-1996 and CAB Abstract, 1992-2000. These are available for users in the library and updates annually up to 2005. The library also subscribes to the following electronic resources and databases: AGORA, HINARI and EBSCOHost (Nimbe Adedipe Library 2017).

The Federal University of Technology Akure (FUTA) was founded in August 1981, with the late Professor Theodore Idibiye Francis as the pioneer Vice-Chancellor. The University was established with the sole purpose to develop technical and scientific training that would contribute towards the growth of the nation's technological sector. Presently, the University possesses seven schools (Federal University of Technology Akure 2017). The FUTALibrary was founded in 1982 and since that time, the library has grown in its scope of operations and social responsibility. The library started in the old library complex situated at Oba kekere (Mini campus) and was moved to its permanent site in April 2006 with an ultra-modern building that covers an area of 1,614.74 square meters with a sitting capacity of 500 readers at a time. However, the library has continued to increase in its mandate of delivering effective and efficient services to support teaching, learning, research and scholarship. The library's collection of books and monographs is about 68, 000 volumes, while journals collection covers about 1,500 titles. The library has successfully subscribed to electronic journals and online databases such as Science Direct and TEEAL. Computer systems in the E-library at the main and branch libraries support the users in gaining access to electronic resources with free and unrestricted internet connectivity in order to reduce the digital divide within the university community (FUTA Library 2017).

The Federal University Oye (FUOYE) is located in Ekiti State of Nigeria. The University was one of the nine Federal Universities founded in 2011 by the former president of the Federal Republic

of Nigeria, Dr. Goodluck Ebele Jonathan. The University's pioneer Vice-Chancellor, Professor Chinedu Ostadinma Nebo, who was later appointed as the Minister of Power by former President Jonathan, necessitated the appointment of Professor Isaac Uzoma Asuzu as the new Vice-Chancellor. The University has two campuses at Ikole-Ekiti and Oye-Ekiti with four faculties and twenty-seven Departments (Federal University Oye2017). However, the primary responsibility of FUOYE library is to make information resources in the library available and to render efficient, effective and quality services to users and the entire community. Being a young institution, the collection of the library is over 5, 000 varieties of information resources in print and electronic formats, these include books, serial publications (journals, magazines, newspapers, bulletins, reports and so on). Apart from these resources, the library also possesses reference materials such as handbooks, dictionaries, atlases, maps, manuals, and encyclopaedias (FUOYE Library 2017).

On the other hand, the Obafemi Awolowo University (OAU) was established as a result of the Ashby Commission Report of1961 and 1962, which stated that the Federal Government of Nigeria should establish three more universities in the country. Obafemi Awolowo University is one of those three universities that were established and is located in Ile-Ife, Osun State. The university initially started with five faculties and eight more faculties were later created, meaning the university has thirteen faculties. The university was formerly known as the University of Ife but was later renamed Obafemi Awolowo University in 1987 in honour of Late Obafemi Awolowo, who was the first Premier of the Western Region of the nation (Obafemi Awolowo University 2017).

Furthermore, the OAU library started alongside with the university in 1962. After seven years of establishment, the library was accommodated in a temporary quarters which were ill-equipped for the requirements of a university library. However, in 1989, the library was relocated to its permanent building of four floors which covers a total of 42, 000sq ft. and purposely designed to house 250, 000 volumes with a sitting capacity of 800 readers (Hezekiah Oluwasanmi Library 2017). In 1980, a suggestion was made for the library to be renamed after Professor, Hezekiah Oluwasanmi owing to his enduring interest in the development of the library as a centre of teaching, learning and research as well as personal, moral and official support for the library in its early days, this therefore led to renaming the library as "Hezekiah Oluwasanmi Library" in 1980 specifically 12th of December (Hezekiah Oluwasanmi Library 2017).

In addition, the library computerisation started in 1977 with the formation of 11-node Local Area Network (LAN). The library's LAN was connected to the Internet in 1998 via the campus wide OAU Net and the number of computers was gradually increased to thirteen in 1999. However, in 2002, the second phase of the library's computerisation was launched; this resulted in the addition of another thirteen computers with an upgrading of the Server Operating System, change in the library databases and setting up of the library's web site (Hezekiah Oluwasanmi Library 2017). Furthermore, the library presently has over 400, 000 catalogue records that need to be converted. This is because the library is opting for Online Catalogue Library of Congress (OCLC) model of re-conversion for accuracy and speed. Over 15, 000 bibliographic records of newly purchased books have been input into the old database which will be transferred to the new database (Hezekiah Oluwasanmi Library 2017). The library started experiencing challenges in procurement of library materials due to the downward turn in the economy of the country, which led to the adoption of several economic measures like austerity, import license scheme, foreign exchange measures and structural adjustment programme that have affected library development in Nigeria (Hezekiah Oluwasanmi Library 2017). In spite of the laudable efforts by librarians in Nigerian university libraries to foster effective knowledge sharing, there are still a lot of gaps to be filled. Many of the challenges confronting knowledge sharing in Nigerian libraries have been well documented (Okonedo and Popoola 2012; Onifade 2014, 2015). The next section identified and presented the statement of the problem.

1.2 Statement of the problem

The role of university libraries and the emergence of information and communication technologies (ICTs) are now compelling librarians in Nigerian university libraries to embrace new skills, competencies, and abilities that will entail adequate knowledge of emerging trends in librarianship and information centres (Onifade 2014). These ICT skills are pertinent for effective knowledge sharing in 21^{st-}century libraries and have been adopted by librarians in developed countries for effective team work, which has led to academic productivity (Virtanen and Neiminen 2002). More so, Tella (2016) contends that the importance of ICT skills among contemporary librarians in the developed world for knowledge sharing cannot be overemphasized. Similarly, existing literature have shown that ICTs are changing the way university libraries currently perform their routine functions in developed countries (Maponya 2004). While this has gone a long way in enhancing

knowledge sharing amongst developed countries, the reverse is the case in Africa and most especially in a developing country like Nigeria.

In examining the case of knowledge sharing and ICT use in the Africa context, Nyambi and Maynard (2012) pinpoint a number of challenges, including lack of ICT skills, poor funding, poor communication systems, poor Internet connectivity, erratic power supply, poor ICT infrastructure, unavailable hardware, lack of ICT facilities. Scholars in Nigeria opined that librarians are faced with a myriad of challenges such as: ignorance of the technology, technical support, erratic power supply, poor internet connectivity, and ergonomics, when sharing knowledge via technology (Tella 2016; Akparobore 2015; Onifade 2015; Lawal et al. 2014; Adomi and Anie 2006; Adedoyin 2005). This assertion corroborates the findings of Anasi, Akpan and Adedokun (2014) that the lack of competence in ICT skills, conducive technology environment, and technophobia, are some of the problem librarians encounter when sharing knowledge via technology. Therefore, this study attempts to broaden the frontier of knowledge, by addressing the dearth of literature with regards to ICT skills on knowledge sharing among librarians in South-West Nigeria. Extant literature showed that limited studies had been done in relation to ICT skills on knowledge sharing in South-West Nigeria.

From the foregoing, this study identifies the need to investigate the influence of ICT skills on knowledge sharing among librarians in Federal university libraries in South-West Nigeria, a lacuna this study intends to fill. Consequently, this study will investigate the level of competence in the use of ICT skills on knowledge sharing among librarians in Federal universities in South-West Nigeria, in order to proffer practical recommendations on how to enhance acquisition of ICT skills required to share knowledge in these contemporary times. However, to solve these problems, three research objectives were proposed which we will now turn to in the next section.

1.3 Research aim, objectives and questions

The aim of the study was to examine the ICT skills on knowledge sharing among librarians in

Federal university libraries in South-West Nigeria.

The specific objectives of this study were as follows:

1. To establish the level of ICT skills among librarians in the Federal university libraries in South-West Nigeria;

2. To establish the effects of ICT skills on knowledge sharing among librarians in the Federal university libraries in South-West Nigeria; and

3. To ascertain the degree of knowledge sharing among librarians in the Federal university libraries in South-West Nigeria.

Arising out of the stated objectives, the following research questions guided this study:

1. What is the level of ICT skills among librarians in Federal university libraries in South-West Nigeria?

2. What are the effects of ICT on knowledge sharing among librarians in Federal university libraries in South-West Nigeria?

3. What are the methods of knowledge sharing among librarians in the Federal university libraries in South-West Nigeria?

4. What is the level of knowledge sharing among librarians in the Federal university libraries in South-West Nigeria?

5. What are the factors affecting knowledge sharing among librarians in the Federal university libraries in South-West Nigeria?

Having identified the research questions, the significance of the study is presented in the next section.

1.4 Significance of the study

Significance of a study is an important feature of research, as it provides the rationale for undertaking a particular research study. According to Nworgu (1991), the significance of a study is necessitated by the fact that it tries to establish whether the research is of some practical value to the society or not. Ani (2013:30) postulates that studies must make significant contributions to the practical development of a given field of knowledge in the society. Woodwall (2012) cited in Ani (2013:30) states that the significance of a study lies in trying to establish why the research is

germane and what new contribution to knowledge the study will add to the existing one. In other words, if the research problems are not well addressed in this study, the consequences and implications are that lack of knowledge sharing using ICT skills in university libraries will continue to be an impediment to librarians in sharing knowledge among professional colleagues, which in turn leads to low job productivity as affirmed by Akparobore (2015).

This study is significant on the following grounds: firstly, the findings of this study would assist policy maker by identifying the required ICT skills needed by librarians as well as formulating policies that will enhance ICT skills acquisition. Secondly, the findings will enhance the librarians to share ICT skills knowledge acquired through intranet, internet, computer, cloud computing, blogs among themselves, which in turn will improve team work. Thirdly, this study revealed new insight into the UTAUT theory as extant literature has shown paucity of its usage particularly on knowledge sharing.

Drawing from the preceding, it is evident that the study is significant and the originality of the study will be discussed in detail in the next section.

1.5 Originality of the study

Originality is a major yardstick for evaluating doctoral research. Originality goes beyond knowledge building and demonstrates the researcher's integrity and authenticity throughout the research process (Guetzkow and Lamont 2004:190). Originality is seen as the using a new approach or procedure, methods, theory; researching a new topic; conducting a research in an understudied region and producing new results (Guetzkow and Lamont 2004:190). This assertion was supported by Cryer (2000) who stressed that originality can be used to include analysing data, research methodology as well as examination of research outcome and investigation of new knowledge.

It is indicated in the literature that most of the studies conducted in Nigeria lack theoretical underpinning (Lawal et al. 2014; Onifade 2015; Awodoyin, Osisanwo, Adetoro and Adeyemo 2016). However, a similar study conducted by Anansi, Akpan and Adedokun (2014) paid little or no attention to the competencies (skills) required in exploring ICT facilities for effective knowledge sharing, which is the main focus of this study. A critical review of Anasi, Akpan and Adedokun's study shows that it is limited in coverage as it covers only three out of six states in

South-West Nigeria. Also, the work focused mainly on ICT infrastructure and does not measure the ICT skills in its objectives. Furthermore, the study adopted single research method (quantitative) with no major theoretical underpinning while it was not based on any research paradigm. In contrast, this present study covers all the six states in the South-West Nigeria using the UTAUT to measure the level of ICT skills of librarians viz-a-viz-knowledge sharing. However, most of the studies conducted in Nigeria, such as (Osunade, Philips and Ojo 2007; Akparobore 2015; Onifade 2015; Tella 2016) focused on knowledge sharing among information professionals neglecting ICT skills on knowledge sharing, hence, making the present study one of its kind.

1.6 Limitations and delimitations of the study

Limitations of the study are potential weaknesses in a study that are out of the researcher's control, while delimitations are those characteristics that limit the scope and define the boundaries of a study (Simon and Goes 2013). The factors of delimitation of the study include the choice of research objectives, the research questions, variables of interest, theoretical perspectives that a researcher is adopting, as well as the population a researcher aims to investigate (Simon and Goes 2013). This study will be conducted as a case study; hence, its findings and results cannot be generalised. The population of the study is limited to librarians in the six Federal university libraries in South-West Nigeria, due to the time frame for completing the programme and financial constraints in carrying out the study. Other personnel such as para-professionals and support staff are left out of the study.

The need for the professional librarians to acquire ICT skills and engage in knowledge sharing among colleagues cannot be overemphasized. There are also limitations arising from the fact that most of the literature on technology adoption is in the context of developed regions, such as Europe, North America and Asia. Therefore, limiting the study to the knowledge of technology adoption in the African context has been identified as appropriate for this study. This study falls under behavioural research, which is a complex subject and a number of theories are in existence that attempt to explain ICT adoption and knowledge sharing. Examples include the Technology Acceptance Model (TAM), Theory of Reason Behaviour (TRB), Theory of Planned Behaviour (TPB), Social Cognitive Theory (SCT), and Extended Technology Acceptance Model (TAM2). Although all the aforementioned theories have positive contributions to the study of technology adoption, they are theories that use different terminologies to basically explain similar concepts.

The Unified Theory of Acceptance and Use of Technology (UTAUT) Model will therefore be adopted for this study because it accommodates the eight different theories. It is also robust and rich in constructs and it is current. The UTAUT model was able to explain 70% of the intention to use technology, as was indicated in literature. Having discussed the limitations and delimitations of the study, a review of the preliminary literature review is the focus in the next section.

1.7 Preliminary literature review

The empirical and theoretical literature reviewed in this section is sourced from both electronic and print library resources in databases, e-books, books, journals, as well as other related media. Literature was reviewed under the following themes: level of ICT skills among librarians; perceived effects of ICT skills on knowledge sharing among librarians; degree of knowledge sharing among librarians; methods of knowledge sharing among librarians, and factors affecting knowledge sharing among librarians.

The review of literature indicated that most of the studies carried out on knowledge sharing among librarians in Nigeria do not take cognizance of ICT skills (Tella 2016; Akparobore 2015, and Lawal et al. 2014, Anasi, Akpan and Adedokun 2014), hence the lacuna this study intends to fill. Furthermore, extant literature shows that there is a paucity of research in relation to ICT skills on knowledge sharing among librarians in the university libraries in South-West Nigeria except Anasi, Akpan and Adedokun (2014) which only studied ICT infrastructure and knowledge sharing. The foregoing inform the present study to investigate ICT skills on knowledge sharing among librarians in South-West Nigeria in order to enhance team work which will go a long way to improve knowledge sharing activities in the library. The present study will be guided by UTAUT model which will be discussed in the next section.

1.8 Principal theories upon which the study is based

There are several theories of technology adoption and knowledge sharing. These include, but are not limited to: Technology Acceptance Model (TAM) (Davis 1989), Theory of Planned Behaviour (Ajzen 1991), Theory of Reasoned Action (Fishbein and Ajzen 1975,1980), Diffusion of Innovation Theory (Rogers 1995), Combination of Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB) Model (C-TPB-TAM), Motivational Model (TM), Model of PC Utilization (MPCU), Social Cognitive Theory (Oshlyansky, Cairnsa and Thimbleby 2007), and

Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis and Davis 2003).

The UTAUT will underpin this study. The UTAUT was formulated by Venkatesh et al. (2003). The theory was developed through a review and consolidation of the constructs of eight models that earlier research had adopted to describe technology acceptance and usage behaviour. It has been established by several studies that the UTAUT model contributes to a superior understanding of drivers of behaviour acceptance and use of emerging technologies over other related theories and models (Venkatesh et al. 2003; Quigfei, Shaobo and Gang 2008; Bhatiasevi 2016).

The rationale of the UTAUT model for this study was inspired by its richness, currency, and high descriptive features, as likened to other technology acceptance and use and knowledge sharing theories. Venkatesh et al. (2003) stressed that previous models were able to describe approximately 40 percent of technology acceptance, whilst on the other hand, the UTAUT was able to explain 70 percent of the intention to use technology. In addition, the UTAUT model integrates eight different theories, thereby making UTAUT one of the most comprehensive and essential theories for explaining information technology adoption and use (Quigfei et al.2008). The UTAUT model has been noted to be applicable to people irrespective of gender, extent of information technology competence, culture, and to a large variety of available technologies, therefore proving its richness and reliability (Bhatiasevi 2016).

The researcher will use all the four constructs in the UTAUT model namely: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Condition.

Performance Expectancy: this is defined as “the degree to which an individual believes that using the system will help him/her to attain improvements in job performance”.

Effort Expectancy: is defined as “the degree of ease associated with the use of the system”.

Social Influence: is defined as an “individual perception that a person who is relevant to him/her considers he/she should use the new system” (Venkatesh et al. 2003:451).

Facilitating Condition: this is defined as “the degree to which an individual believes that an organisational and technical infrastructure exists to support use of the system” (Venkatesh et al. 2003).

Despite the fact that UTAUT is relatively new, its richness, suitability, validity, and reliability in technology adoption studies in different milieus, has been confirmed by various researchers like Venkatesh et al. 2003; Lin, Chan and Jin 2004; and Rosen 2005.

The aforementioned constructs in the UTAUT theory are operationalised below in relation to the present study.

Performance Expectancy: this is operationalised as "the degree to which a librarian believes that having ICT skills will enhance knowledge sharing".

Effort Expectancy: this is "the degree to which a librarian believes that ICT skills will ease knowledge sharing".

Social Influence: this is defined as "a librarian perception that a person who is relevant to him/her, thinks he/she should share new knowledge".

Facilitating Condition: this is "the degree to which a librarian believes that organizational and technical infrastructures exist to support knowledge sharing".

Table 1: Mapping out research questions with constructs in UTAUT

S/N	Research questions	UTAUT Variables
1.	What is the level of ICT skills among librarians in Federal university libraries in South-West Nigeria?	Effort Expectancy (EE)
2.	What are the effects of ICT skills on knowledge sharing among librarians in the Federal University Libraries in South-West Nigeria?	Performance Expectancy (PE)
3	What are the methods of knowledge sharing among librarians in the Federal University Libraries in South-West Nigeria?	Performance Expectancy (PE) Effort Expectancy (EE) Social Influence (SI)

4.	What is the degree of knowledge sharing among librarians in the Federal University Libraries in South-West Nigeria?	Social Influence (SI) Effort Expectancy (EE)
5.	What are the factors affecting knowledge sharing among librarians in the Federal University Libraries in South-West Nigeria?	Social Influence (SI) Facilitating conditions (FC) Effort Expectancy (EE)

1.9 Methodology

This section presents the basic information on aspects of the research methods employed in the study. The study adopted the post-positivism research paradigm which combines both quantitative and qualitative (Gray 2004:8). The embedded type of mixed method research design was adopted in this study. The quantitative data were collected using a survey questionnaire, while the qualitative data were collected through in-depth interviews.

The questionnaires were used to collect data from professional librarians in the university libraries studied, while the interview schedules were used to collect data from the university librarians from the six Federal university libraries studied. The reason for interviewing the university librarians was because they are members of the university management and as such great onus lies on them to possess and provide in-depth knowledge about ICT skills of librarians and knowledge sharing in their institutions' libraries.

The study used a descriptive survey research design. The population of the study consisted of 114 professional librarians (NLOF Listserv 2016) from the six Federal university libraries in South-West Nigeria. The Statistical Package for Social Sciences (SPSS) was used to analyse the quantitative data collected through the questionnaires, while the data collected through interviews was analysed using thematic content analysis.

Moreover, to ensure validity and reliability, data collection instruments were pre-tested on professional librarians at the Ladoke Akintola university library to confirm the clarity of questions, refine themes and as well validate their usefulness and performance in the actual data collection

process. Furthermore, the Alpha Cronbach's correlation coefficient ranges from 0-1; items with a high Cronbach value that is 0.7 and above were retained and items with a low Cronbach coefficient was reformulated. The detailed discussion of the methodology section is presented in Chapter Four (Research Methodology).

1.10 Ethical issues

Homan (1991) positions that human subjects in research must be allowed to either agree or refuse to partake after receiving all the necessary and relevant information about a specific research. The author also maintains that the ethical concepts of informed consent and openness lie on the principle of privacy. Stevens (2013) submitted that the dignity, safety, right as well as well-being of contributors or participants should be primarily considered in any research.

The study complied with the University of KwaZulu-Natal research ethics policy. Permission was granted by the six Federal university libraries under study. Participants were informed and briefed on the purpose of the study before questionnaires were administered as well as before the commencement of the interviews. Respondents were free to withdraw from the study at any stage if they so wished.

1.11 Structure of thesis

CHAPTER ONE: Introduction

This chapter introduced the study and gave the background to the study. Subsections included statement of the problem, objectives of the study, research questions, significance and scope of the study, limitation and delimitation of the study, principal theory upon which the study is based and preliminary literature. The methodology used to conduct the study as well as ethical considerations were included.

CHAPTER TWO: Theoretical Framework

This chapter discusses the theoretical framework upon which the study was based. Related theories mentioned in the theoretical framework were reviewed, with an emphasis on the Unified Theory of Technology Acceptance and Use (UTAUT) model.

CHAPTER THREE: Literature Review

This chapter reviews existing literature relevant to the study. It presented a global view of studies that have been conducted on ICT skills with respect to knowledge sharing, while narrowing it down to Africa, and South-West Nigeria to be specific.

CHAPTER FOUR: Methodology

This chapter discusses the research methodology and methods employed towards achieving the objectives of the study. It also provided details on the research paradigm, research design, population, sampling techniques/sample size, methods of data collection, validity and reliability of the instrument, and data analysis, while also recapping ethical issues.

CHAPTER FIVE: Analysis and Presentation of Data

This chapter focuses on analyses and presentation of findings obtained from the quantitative and qualitative data only.

CHAPTER SIX: Interpretation and Discussion of Findings

Findings of the study from the quantitative and qualitative analysis are interpreted and discussed in this chapter based on the study's research questions.

CHAPTER SEVEN: Summary of findings, Conclusion and Recommendations

This chapter provides a summary of findings and conclusion on the study, as well as recommendations and suggestions for further research in related fields.

1.12 Summary

This chapter introduced the phenomenon being investigated, which is the ICT skills on knowledge sharing among librarians in Federal university libraries in South-West Nigeria. This chapter provided general information on the background to the study as well as university libraries and their roles in knowledge sharing. Research problems were identified having reviewed relevant literature in the realm of the study. Three research objectives were identified to guide the study. Following the research objectives, five research questions were proposed for the study. The study also discussed how the significance of the study was related to society, practice, theory and policy.

Originality is viewed as the utilisation of a new approach or procedure, methods, theory; researching a new topic; conducting a research in an understudied region and producing new results (Guetzkow and Lamont 2004:190). The previous studies paid little or no attention to the competencies (skills) required in exploring ICT facilities for effective knowledge sharing, which makes the study original. The chapter further introduced UTAUT as the theoretical model underpinning the study particularly the four constructs (Effort Expectancy, Performance Expectancy, Social Influence and Facilitating Condition).

The preliminary literature reviewed showed that there is need to know the librarians' knowledge and degree of ICT skill (for example, Ayoku and Okafor 2015) while Quadri (2012) and Enakrire (2015) stressed that ICT skills are essential for resource sharing. Knowledge sharing in libraries has been widely investigated (Onifade 2015; Okonedo and Popoola 2012); while factors like trust (Biranvand, Seif and Khasseh 2015), organisational culture (Koloniari, Vraimaki and Fassoulis (2016), ICT skills (Nengomasha, Mubuyaeta and Beukes-Amiss (2017; Azuh and Modebelu 2013; Anasi, Akpan and Adedokun 2014). The post-positivism research paradigm which combines both qualitative and quantitative methods was employed for this study. The theoretical framework adopted for this study will be explained in Chapter Two.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 Introduction

The aim of this study was to investigate the influence of ICT skills on knowledge sharing among librarians in Southwest, Nigeria. Basically, theories are formulated to explain and understand a particular phenomenon. In most cases, they are used to challenge and extend pre-existing knowledge within the limits of critical bounding assumptions. A theoretical framework is regarded as the structure capable of holding as well as supporting the theory of a study (University of Southern California Libraries Guides 2018). A theoretical framework is also regarded as a theoretical system with assumptions, concepts and specific social theories (Neuman 2006). Brink, Van Der Walt and Rensburg (2012) note that basically, a theoretical framework is always based on propositional statements resulting from an existing theory. Theoretical framework serves as the lens through which a hypothesis is examined to determine its validity (Creswell 1994).

Generally, in the scientific discipline, the term "theory" is used as a credible and acceptable body of principles or the general principle offered to explain a certain phenomenon (Bhattacherjee 2012). Philosophically, it is expected that a theory is a model capable of predicting future observations and occurrences that are being tested through experiment, or verified through empirical observation (Kawulich 2009). Leedy and Ormrod (2005:4) assert that: "A theory is an organized body of concepts and principles intended to explain and predict a particular phenomenon". Therefore, theories explain *how* and *why* things function the way they do (Johnson and Christensen 2008:7).

Theories can be further defined as the provision of a set of descriptive variables or constructs that can be used to predict a certain phenomenon. A model is the "systematic description of a system, theory or phenomenon that accounts for its known or inferred properties and which may be used for the further study of its characteristics" (Samaradiwakara and Gunawardena 2014: 23). A model is an "abstract representation of some portion of the real world, constructed for the purpose of understanding, explaining, predicting a phenomenon being examined" (Burch 2003: 266).

In some studies, the theoretical framework and review of literature are presented in the same chapter; other studies place the theoretical framework at the end of the introduction; while some studies present it along with the literature review. Creswell (1994; 1998) advocates that the theoretical framework and review of literature be separated to have a better understanding of the theory being studied. Brink, Van Der Walt and Rensburg (2012) stress that a theoretical framework is based on affirmation of views resulting from a pre-existing theory. A theory is viewed as a generalized statement that affirms a connection between two or more phenomena. It is also an interconnected abstractions system that condenses and organizes knowledge about a phenomenon (Sunday n.d.). It is mutually related constructs (that is, variables) formed as assertions or hypotheses that specify connection among variables (Creswell 2009). Theories help to stimulate and encourage research as well as extend knowledge by providing response and direction (Polit and Beck 2004). The purpose of theories in research is also to make generalised meaningful findings.

A theoretical framework measures the variables in a research and provides a separate clarification and elaboration of how and why a researcher would expect the independent variable to foresee the dependent variable (Kerlinger 1979). The purpose of this study was to review theoretical frameworks/models relevant to the independent and dependent variables on the influence of ICT skills on knowledge sharing by librarians.

Theories abound for the study of technology adoption, but Technology Acceptance Model (TAM) has emerged as the most commonly adopted model. Motivation Theory, Combined TAM, Theory of Planned Behaviour and the Model of PC Utilization are extensions of TAM. The Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis and Davis (2003) is a more recent theory. The UTAUT model combines eight (8) existing theories on the use of technology: Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Motivational Model (MM), Theory of Planned Behaviour (TPB), a combination of Technology Acceptance Model (TAM) and TPB Model (CTAM and TPB), Model of PC Utilization (MPCU), Diffusion of Innovation Theory (DOI), and Social Cognition Theory (SCT) (Oshlyansky, Cairns and Thimbleby 2007). These combined eight theories are discussed in detail in the following section. Likewise, knowledge management theory such as Social Exchange Theory (SET) was also reviewd in this section.

2.2 Technology Acceptance Model (TAM)

According to Davis, Bagozzi and Warshaw (1989), the Technology Acceptance Model (TAM), is a theoretical model that has proven useful in explaining, describing and predicting user behaviour towards information technology. According to Davis (1989) and Davis, Bagozzi and Warshaw (1989), TAM was proposed to unfold the reason for user rejection or acceptance of information technology by adapting TRA and TPB. TAM is regarded as an influential extension of Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) (Ajzen and Fishbein 1980). The TRA and the TAM claim that "behaviour is determined by the intention to perform the behaviour" (Ajzen and Fishbein 1980, cited in Moon and Kim 2001:218). TAM provides a foundation with which one traces how external variables affect belief, attitude and intention towards the use of information technology (Davis 1989, cited in Moon and Kim 2001). TAM was basically developed to understand and describe the factors affecting computer technology acceptance and use in an institution as well as an organization (Davis 1993; Lee, Kozar and Larsen 2003; Ramayah 2006). Many researchers have used TAM to explain acceptance and intention of individuals to use variation and diversity of technologies. TAM proves that individual behavioural intention can actually determine the use of technology. Saade, Nebede and Tan (2007) submit that perceived usefulness and perceived ease of use are both determined by behavioural intention. The TAM argues that perceived ease of use and perceived usefulness greatly influence an individual's attitude towards behavioural intention to use information technology.

TAM is the most commonly used theory especially for individual's acceptance and use of information technology (Lee, Kozar and Larsen 2003). Devaraj, Fan and Kohli (2002) assert that TAM has been used by many researchers to study user's acceptance of technology owing to its focus on attitudinal intention in order to use the technology. TAM is appropriate when observing the relationship between users and technology, and establishing the elements involved in technology acceptance and behaviours in the use of information technology (Davis et al. 1989; Venkatesh et al. 2003). Teo, Luan and Sing (2008), Ghobahloo, Zulkiflu and Aziz (2010), and Priyanka and Kumar (2013) note that TAM is based on TRA.

Davis (1986) relied on Ajzen and Fishbein (1980) with the formulation of TRA to further refine his model to the TAM, as shown in Figure. 2.1 below:

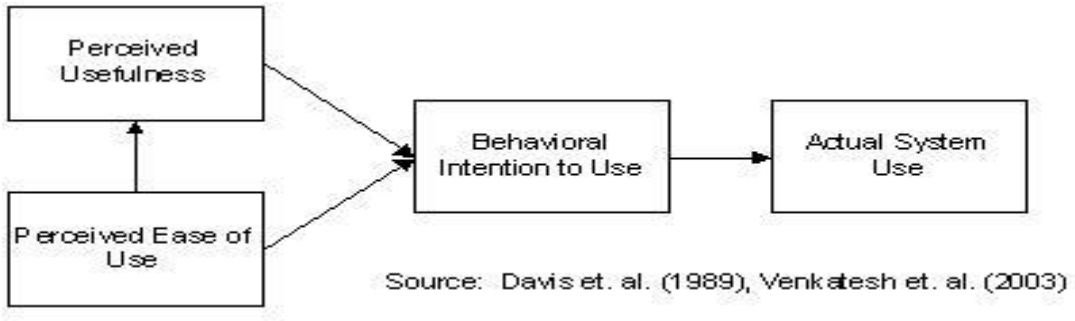


Figure 2.1: Diagrammatic representation of the Technology Acceptance Model

The above diagram shows that users' motivation can be explained by three major factors, namely: perceived ease of use, perceived usefulness and attitude in order to use system. Davis (1986) observes that the major determinant of the possibility of a user's acceptance or rejection of the system has been traced to be the user's attitude towards a system. In other words, user's attitude is influenced by two beliefs: perceived usefulness, that is the extent to which a user believes that usage of system will improve their job productivity; and perceived ease of use, that is extent to which a user believes that usage of system will be free of effort, which has direct influence on perceived usefulness (Davis 1986).

Davis, Bagozzi and Warshaw (1989), Davis and Venkentesh (1996), and Venkentesh and Davis (2000) modified the original TAM model. Davis, Bagozzi and Warshaw (1989) added behavioural intention as a new variable to the original model, with the conclusion that behavioural intention will have a direct influence on the perceived usefulness of the system. According to Davis, Bagozzi, and Warshaw (1989), if the system is useful, the user will develop a very strong intention to use it. The final version of the model was updated by Venkatesh and Davis (1996), as shown in Figure. 2.2.

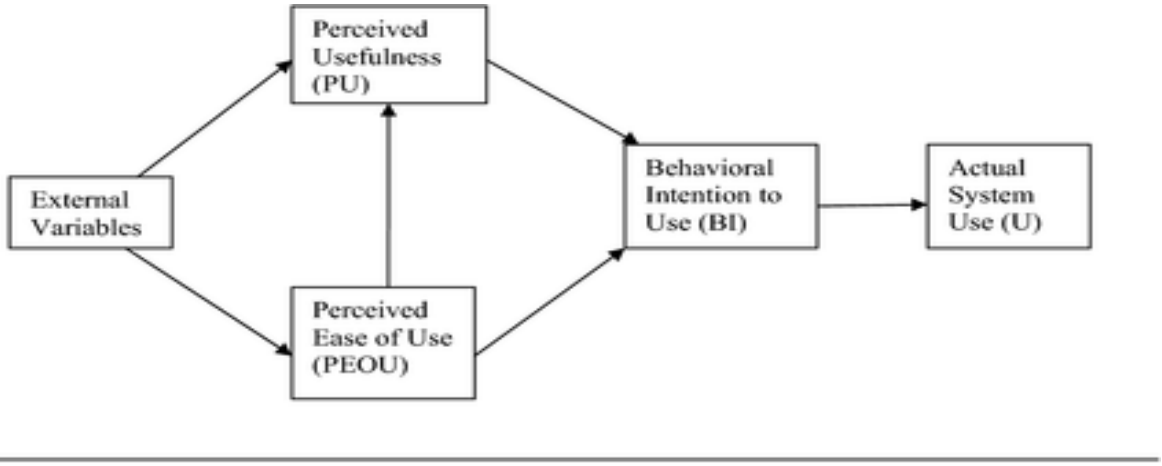


Figure 2.2: Technology Acceptance Model

Source: Davis and Venkatesh (1996)

TAM opines that perceived ease of use influences perceived usefulness (Davis 1989, cited in Moon and Kim 2001). Behaviour is decisional and judgmental. Perceived usefulness and perceived ease of use are perceived to influence behavioural intention which is in turn affected by the attitude towards the behaviour, as embedded in the Theory of Reasoned Action (TRA). Ani (2013) submits that attitude towards a behavioural intention to the use of information technology is determined by perceived usefulness and perceived ease of use. The TAM is to eliminate the initial variable subjective norm from TRA. From the perspective of TAM, the use of ICT in universities by librarians should be voluntary. Davis (1993) stresses that attitude to the use of ICT is a major challenge that ascertains if a potential librarian will or will not use ICT. Thus, attitude towards the usage of ICT affects actual use with perceived usefulness and perceived ease of use as the elements of attitude (Koufaris 2002). As noted by Davis (1993:476), attitude toward the use is influenced by perceived usefulness and perceived ease of use. These have helped TAM application to unfold, explain and predict acceptance and use of ICT by different people especially librarians in universities.

Perceived usefulness is described as "the degree to which a person believes that using a particular system would enhance his or her job productivity" (Davis 1989:320). Perceived usefulness is a concept that expounds and unfolds the expected overall cause of use of ICT on job productivity (Davis 1993). In other words, if there is a high degree of usefulness in a system (for example, ICT), the potential user (for instance, librarian) will surely use the technology for knowledge sharing among themselves. According to Saade, Nebebe and Mak (2009), it can be submitted that

perceived usefulness is the degree to which a librarian believes that ICT skills will enhance knowledge sharing to improve his/her job productivity.

Empirical studies showed that TAM has high validity when studying the adoption of technology (Ramayah, Siron, Dahlan and Mohamad 2002). It has also been applied to many studies, including Computer Science, Information Science, as well as Library and Information Studies. The TAM has been applied to MS Word and Excel (Chau 1996); personal computer with a graphic user interface (Agarwal and Prasad 1999); E-learning (Punnoose 2012); technology in health care (Holden and Karsh 2010); digital libraries (Hong et al. 2001); spreadsheet (Yang and Yoo 2004); adoption of Internet banking (Lee 2009); the Internet and World Wide Web (Lederer et al. 2000); and use of learning management system (Alharbi and Drew 2014).

Oye, Iahad and Rahim (2014) assert that TAM is meant to discuss the acceptance of information system technology and to predict the information technology use in various disciplines. It provides opportunity for better expansion when compared to related theory (Taylor and Todd 2001). It is a strong and widely used model when studying acceptance and use of technology, though it has some shortcomings (Lee, Kozar and Larsen 2003; Sheikhshoaei and Oloumi 2011).

The method used in testing the reliability of TAM, TAM variables and existing relationship between them, and the foundation of the theory has been criticised. It is considered by many scholars as a theory with questionable methods of solving problems (Chuttur 2009; Priyanka and Kumar 2013). Besides, it does not fully examine the external variables that influence the perceived usefulness and perceived ease of use (Priyanka and Kumar 2013). Legris, Ingham and Collerette (2003) also argue that TAM totally excludes business environment applications that are used; hence, it does not consider challenges like time/money as factors that may prevent an individual from using information system (Taylor and Todd 2001; Al-Shafi and Weerakkody 2009).

Holden and Karsh (2010) argue that there is a need for standardization in TAM. In addition, more tests of certain relationships as well as better ways of reporting of data should be incorporated in TAM. There is also the need to continually explore new theoretically motivated variables and relationships that can be added to TAM. Such variables as actual use have been too infrequently measured, precluding tests of several important relationships, like the relationship between

intention and actual use (Rawstorne, Jayasuriya and Caputi 2000; and Chen, Wu and Crandall 2007).

Moreover, Alabi (2016:36) notes that TAM "lacks sufficient rigour and relevance that could make a well-furnished theory in the realm of information system." Researchers have mixed opinions regarding its theoretical assumptions as well as practical effectiveness (Chuttur 2009). Bagozzi (2007) posits that a poor theoretical relationship exists among TAM constructs. He queries the link between actual use and behavioural intention and suggests that behavioural intention may not be adequate to represent the actual use of information system owing to certain conditions and uncertainties. TAM points at individual users of an information system with the construct of perceived usefulness, while completely totally ignoring the social processes of information system development as well as its implementation (Priyanka and Kumar 2013).

In summary, TAM is limited in explaining adoption and acceptance of technology. It fails to account for information system analysis and design in all facets and branches. It equally disregards the technology adoption that dictates the societal forces (Olasina 2014). The aforementioned deficiencies make TAM unsuitable for this study because the study's main focus is an institution which is part of the social system. This takes us to the TRA which will be discussed in the next section.

2.3 Theory of Reasoned Action (TRA)

The theory of reasoned action was propounded by Martin Fishbein and Icek Ajzen as an improvement on Information Integration theory (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980). The theory has two important changes: TRA other principles – the process of persuasion and behavioural intention (Ajzen and Fishbein 1980). However, TRA acknowledges that there are factors that influence attitude. TRA uses the two principles of norms and attitudes (other people's expectations), in order to predict behavioural intention (Fishbein and Ajzen 1975). TRA aims to explain volitional behaviours. TRA's explanatory depth excludes a wide range of behaviours in a way that is spontaneous, habitual and impulsive; it is the result of cravings or mindlessness (Bentler and Speckart 1979; Langer 1989).

TRA is a social psychology model that is well established. The Theory has been developed, refined and tested by Chuttur (2009). It specifically explains and "interprets what determines consciously

intended behaviour" (Ghobahloo, Zulkiflu and Aziz 2010:10). Al-Quesi (2009) submits that TRA is the most primary model used to clarify technology acceptance. It is still relevant due to its aptness at explaining the connection between individual's behaviour and attitudes towards performing the said behaviour as well as the subjective norms that are associated with the behaviour (Teo, Luan and Sing 2008).

In other words, TRA could explain a person's behaviour when volitional control is relatively high. In a situation where volitional control is low, the theory of planned behaviour is more appropriate for interpreting and explaining behaviour (Ajzen 1991). Dillon and Morris (1996) define attitude as feelings or beliefs. Attitude is established to represent a summary assessment of a psychological object captured in these quality dimensions: pleasant-unpleasant, likable-unlikable, harmful-beneficial and good-bad (Ajzen and Fishbein 2000). Beliefs refer to the individual's subjective probability capable of performing a given behaviour which will result in a consequence (Dillon and Morris 1996). TRA assumes that individuals are rational and, as such, they will make use of information systems by considering their implications (Ajzen and Fishbein 1980).

TRA further states that an individual's behavioural intention can be determined by subjective norms and attitude; thus, intention predicts actual behaviour (Pickett et al. 2012). An Individual's attitude towards behaviour is viewed as the degree to which performance of behaviour is valued either positively or negatively. In predicting information technology, TRA focuses on behavioural intention, rather than attitude, as shown in Figure.2.3

Fishbein and Ajzen (1975) and Ajzen (1991) view "subjective norms" as perceived social pressure to either perform or not to perform the behaviour. This submission indicates that subjective norm refers to how academics perceive people who are professionally associated with thinking they should perform or not perform a specific behaviour (Dillon and Morris 1996).

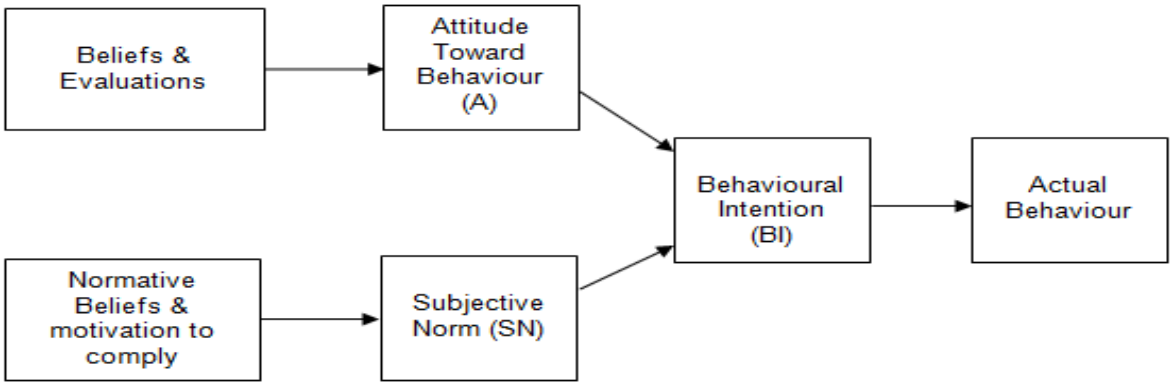


Figure 2.3: Theory of Reasoned Action

Source: Fishbein and Ajzen (1975)

The TRA is quite appropriate when predicting alternative choices among individuals. It is robust and capable of offering strong predictive utility, even when used to examine activities and situations that fall outside the original conditions of the theory (in such a way as to predict non-voluntary behaviour). It emphasises that individual attitude is influenced by belief, which determines behavioural intention to use technology (Dillon and Morris 1996).

Ajzen and Fishbein (1980) assert that TRA is a common theory that can be used to elucidate individual behaviour. Therefore, TRA is appropriate and applicable especially when studying the influence of computer technology adoption and use behaviour (Davis, Bagozzi and Warshaw 1989). It is wider and broader in scope in terms of its field of application. It is the foundation for formulating most technology theories/models and especially information technology acceptance, like UTAUT and TAM (Ani 2013).

Samaradiwakara and Gunawardena (2014:28) submit that TRA has been modified for use in numerous fields of study and has been broadly used in academia. It has also been validated in the information system study. The TRA model has certain limitations, which include high risk of confounding amongst norm and attitudes, since attitudes can also be framed to mean norms. Also, the TRA assumes that behaviour is under volitional control (Alabi 2016). Having highlighted the limitations of TRA, the next section will discussed TPB.

2.4. Theory of Planned Behaviour (TPB)

The theory of planned behaviour was propounded in 1985 by Icek Ajzen. The theory predicts the intentional behaviour of an individual since behaviour can be intentional and planned. The TPB was developed from the TRA, which was proposed by Ajzen and Fishbein (1980). TPB came into being as a result of the finding that behaviour appeared to be involuntary and under control, necessitating the addition of perceived behavioural control (Ajzen and Fishbein 1975; 1980).

TPB uses subjective norms, perceived behavioural control and attitudes to predict intention with high accuracy. However, TPB assumes that, when combined, an individual's intention with perceived behavioural control will help to predict behaviour with greater accuracy than TRA (Ajzen 1991). Ajzen (1988) categorizes TPB into three independent antecedents which lead to behavioural intention. These are perceived behaviour control, attitude towards behaviour and subjective norms (Ajzen 1991). Attitude towards behaviour emphasises the degree to which an individual has a positive or negative assessment of one's performance of the said behaviour. Perceived behavioural control deals with people's perception, whether they can or cannot perform a specific behaviour and how to perform the behaviour easily. Subjective norms refer to the degree to which an individual believes that other people think whether or not a person should perform the behaviour. The key opinions of people will assist in determining whether an individual will positively perform the behaviour (Ajzen 1991).

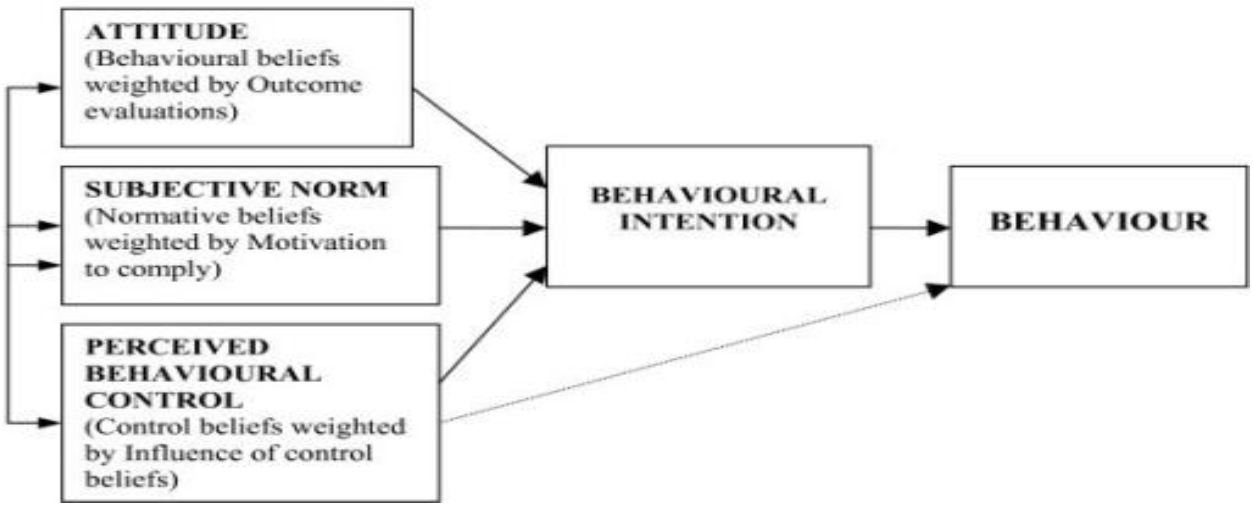


Figure 2.4: Theory of Planned Behaviour

Source: Ajzen (1991)

Behavioural intention indicates an individual's readiness to perform a specific behaviour. It is based on individual's behaviour, perceived behavioural control and subjective norm; each predictor is significant in relation to the behaviour as shown in figure 2.4 above (Ajzen 2006). Perceived behavioural control refers to people's perceptions generally and their ability to perform a specific behaviour. The construct includes perceived ease or difficulty associated with a person's behaviour or a specific task. Perceived behavioural control in the TPB is determined by the set of total accessible controls that may hinder and as well facilitate the performance of a particular behaviour (Ajzen 2006).

The figure 2.4 above indicated that the construct of subjective norm refers to the perceived social pressure on whether to or not to engage in a particular behaviour (Ajzen 2006). Subjective norms are assumed to be determined by the set of total accessible normative beliefs that is concerned with the expectations of important reference. Both descriptive and injunctive norms are recommended by Ajzen (2006) when measuring subjective norms. Attitude towards behaviour is also used to predict behavioural intention, which can be defined as the degree to which an individuals' behavioural performance is positively or negatively valued (Ajzen 2006).

The TPB has been applied to various studies on technology adoption and innovation. For instance, Fortin (2000) used the theory of planned behaviour to investigate the clipping of online coupons behaviour. Morris and Venkatesh (2000) also studied decisions about workers technology usage as well as their attitudes towards technology adoption. In a similar study Hsu, Yen, Chiu and Chang (2006) examined online shopping behaviour using an extended version of TPB. In addition, Troung (2009) conducted a study on consumer acceptance of television services and online video using the theory of planned behaviour. Lee, Cerreto and Lee (2010) used the TPB in an educational sector to investigate the intentions of teachers to use computer technology in delivery of services and teaching. Carswell and Venkatesh (2002) conducted research on distance learning centres. They studied students' attitudes and actions toward web-based distance education using the TPB. Irani and O'Malley (1998) cited in Knabe (2012:84) conducted research on cognition and innovativeness as a factor for predicting students' intents and attitudes in a web-based learning environment using the TPB.

The TPB was used to predict the use of podcasts by university students (Moss, O'Connor and White 2010). Ryu, Ho and Han (2003) conducted a study on the knowledge sharing behaviour of

physicians in hospitals in Korea. The study compared the TRA and TPB to determine the intention of physicians. It concluded that TPB was superior to TRA and suitable for explaining physicians' intention to share knowledge. In addition, subjective norms had the strongest effects on the behavioural intentions of physicians to share knowledge with direct and indirect attitudes, while attitude was the second strongest and most important factor influencing the intentions of the physicians (Ryu, Ho and Han 2003).

The major strength of TPB is that the theory is broadly applicable to behaviours in diverse environments and disciplines of learning, such as technology adoption, mass transit use, distance learning education, as well as health information and communication (Knabe 2012:11). There are, however, limitations to the TPB. LaMorte (2016) indicated that TPB sees behaviour as a result of the parallel decision-making process, not considering that behaviour can change over time. Also, TPB does not consider how to factor other variables into behavioural intention and motivation like mood, threat and fear. TPB does not address the time frame between the behavioural action and intent of an individual (LaMorte 2016). It can be deduced from the foregoing submission that the TPB concentrate more on behaviour, making it unsuitable for the present study. The preceding takes us to the motivation model in the next section.

2.5. Motivation Model (MM)

Motivation is defined as the process in which an individual is pushed to complete a specific task or energy in order to achieve certain goals or needs (Herbert 1976). Davis, Bagozzi and Warshaw (1989) state that technology acceptance behaviour motivation model was developed to examine users' information system motivation and utilization.

Van der Heijden (2004:697) designed an MM of microcomputer usage support. The author notes that "one may anticipate extrinsic motivation to be the principal predictor of behavioural intentions in using the system at the expense and outflow of intrinsic motivation". These motivators (extrinsic and intrinsic) are both hypothesized to directly influence ICT use. Motivation model projected that motivational factors influence the effects of individual precursor and group on ICT use. The MM further stipulates that organizational support, skills and social factors are predicted to have an influence on ICT use through their effects on perceived enjoyment, perceived usefulness and social pressure (Van der Heijden 2004).

Van der Heijden's (2004:697) study above supports that of Igbaria, Prasuraman and Baroudi (1996), who established TRA in developing the MM of microcomputer usage. The study suggests that individuals' behaviour is determined by attitudes and perceptions towards social factors. Deci and Ryan (1985) confirms that the possibility that the people might derive motivation to use and adopt ICT as a result of internal and external factors, like reward, influences their perceptions of ICT usage.

MM asserts that using new technology with behavioural intention will be affected by intrinsic and extrinsic motivations of users. The intrinsic motivation is seen as the notion that users' will desire to perform a specific activity without any encouragement or reinforcement rather than performing the activity per se, while extrinsic motivation is the notion that users will desire to perform a specific activity with the perceived instrument, like pay and promotions, in achieving valued outcomes that are different from such activity (Davis, Bagozzi and Warshaw 1992). The model uses both intrinsic and extrinsic motivations as the key constructs to explain behavioural intention. MM revealed the motives behind user actions and reactions towards the use and adoption of technology based on intrinsic and extrinsic motivation (Alabi 2016:37).

Cocosila, Archer and Yuan (2009) aver that extrinsic motivation and perceived usefulness have the same characteristics, as indicated in Figure 2.5.

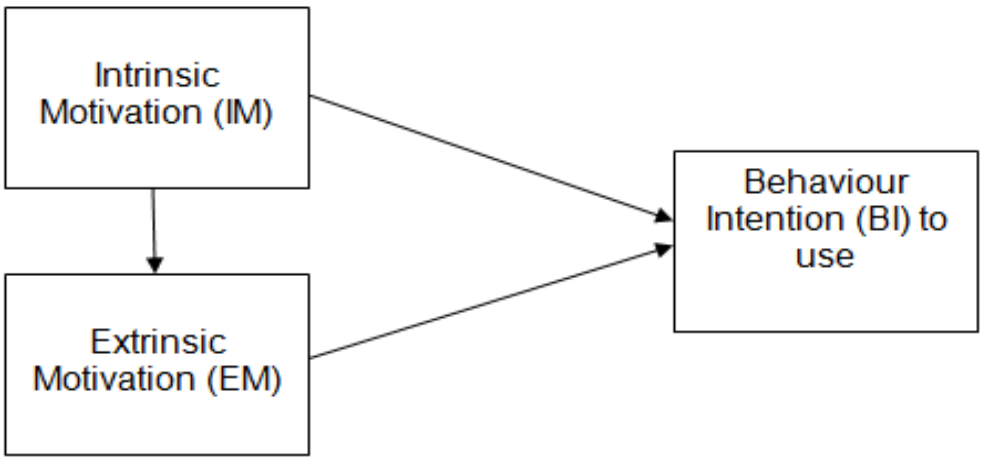


Figure 2.5: Motivation Theory

Source: Cocosila, Archer and Yuan (2009).

Deci and Ryan (1980; 1985) suggest a multi-dimensional viewpoint of extrinsic motivation which appears as "self-determined" and "non-self-determined. Extrinsic motives can be coercive and imposed on the individual. Self-determined motivation is regarded as the behaviours that are coherent with individuals' value system (Deci and Ryan 2000). When going through the self-determined extrinsic motivation, it is said that one voluntarily decides to be engrossed in the activity owing to its significance and concordance with one's value (Sheldon and Elliot 1999).

Non-self-determined motivation, on the other hand, is the behaviour imposed on self by others or one's sense of obligation. When experiencing non-self-determined extrinsic motive, one feels pressured to participate in the activity owing to the fact that underlying motives for participation are yet to be integrated into a sense of one's self as well as one's value system (Deci and Ryan 2000).

In criticizing the Motivational Model, Venkatesh et al. (2008) and Vallerand (2001) claim that the model is too intricate to offer any simple application in organizational practice. The model is seen as being inappropriate for information science research. Its assumptions are restrictive, slight, and too distinctive. It does not take into consideration a wider range of external variables (Venkatesh et al. 2008). It is evident that the distinctive nature of motivational model, according to previous researchers (Venkatesh et al. 2008) and Vallerand (2001), is reflected in its failure to consider the wider range of external variables which makes it inappropriate for a discipline like Information Science which the present study falls under. This takes us to the combined TAM and TPB in the next section.

2.6 Combined TAM and TPB (C-TAM-TPB)

This is a combination of TAM and TPB. Yayla and Hu (2007) argue that TAM and TPB have been widely used theories in the information studies literature. Scholars have combined both TAM and TPB to have a better understanding of technology acceptance and use behaviour (Chen and Chao 2011).

Taylor and Todd (1995) and Ventakesh et al. (2003) note that C-TAM-TPB combines predictogrs of TPB with the perceived usefulness of TAMS to make it a hybrid model. TAM is specifically meant to predict behavioural intentions among users in using technologies and ability of substantial usage behaviour. It has been widely used and supported by some researchers (Taylor and Todd

1995; Yayla and Hu 2007; Chen and Chao 2011). However, control and social factors were not integrated into the research model; whereas empirical studies clearly showed that both factors (control and social) had a significant influence of usage behaviour on users for using technologies. Control and social factors are regarded as key variables in TPB (Taylor and Todd 1995).

Taylor and Todd (1995) conducted research among students using computer resource centre facilities. The result revealed that C-TAM-TPB integrated TAM and TPB with high fitness to describe user behaviour for using emerging technologies. Taylor and Todd (1995) integrated TAM and TPB and added two control variables to TAM. The variables were subjective norms and perceived behaviour control. The combination of TAM and TPB led to C-TAM-TPB. It was found from C-TAM-TPB research that perceived ease of use leads to positive impact on perceived usefulness, perceived ease of use; perceived usefulness leads to positive impact on attitudes, subjective norms, perceived behavioural control; while attitude leads to positive influence on usage behaviour (Chen 2013:2978). The C-TAM-TPB has the following core constructs: attitude, perceived behavioural control, subjective norms, adapted from TRA and TPB; while perceived usefulness was adapted from TAM as illustrated in Figure. 2.6.

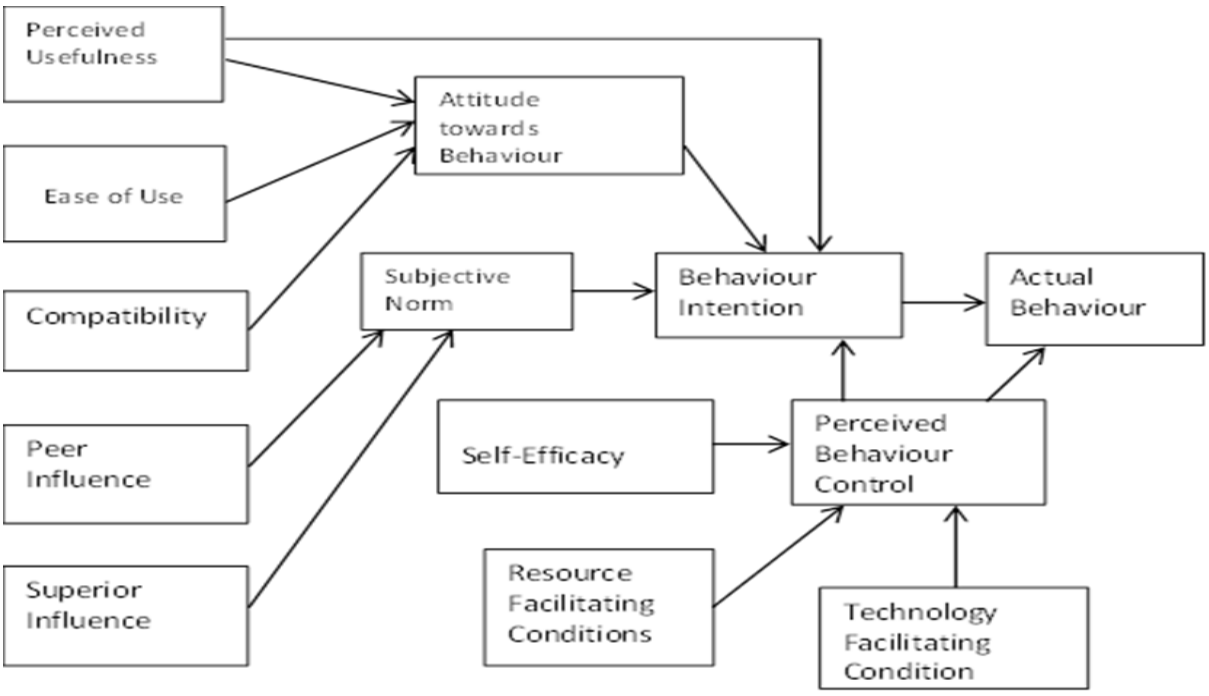


Figure 2.6: Combined TAM and TPB (C-TAM-TPB)

Source: Taylor and Todd (1995:146)

Wu, Li and Fu (2011:589) combined TAM and TPB to investigate healthcare services among professionals. The authors posit that there are linkages between behavioural intention and behavioural control as well as behavioural norms and subjective norms to the use of mobile technology in healthcare services. Sentosa and Mat (2012) used the model to elucidate the acceptance and adoption of the Internet purchasing with the integration of TPB and TAM. The study investigated the relationships between subjective norms, perceived behaviour, attitude, perceived ease of use and perceived usefulness towards intention as well as Internet acceptance and purchasing behaviour.

Wu et al. (2011) argue that TPB is used to clarify the behaviour of technology adoption and knowledge sharing by considering the role of an individual and organizational system in this process. The TAM concentrates on the technological facet and its strengths are thrifty and highly explanatory. Okite-Amughoro (2017:30) stresses that TAM is deficient in considering the effects of organizational and individual factors in the process of adoption of technology and knowledge sharing.

Alatawi, Dwevedi, Williams and Rana (2012:15) criticize the C-TAM-TPB model of being inadequate for research on organizational aspects. The reason is that C-TAM-TPB eliminates the entire technological investigation in organizational context rather than individual behaviour. It can be deduced from the foregoing that the C-TAM-TPB eliminates the whole technological infrastructure, making it unsuitable for the present study. The preceding takes us to the model of PC utilization in the next section.

2.7. Model of PC Utilization (MPCU)

The Model of PC Utilization (MPCU) was formulated by Thompson, Higgins and Howell (1991). It focuses on behaviour and attitudes, with competing perspectives to the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB). Triandis (1977) submits that the model underpinning conceptual paradigm is derived basically from the human behaviour theory. The nature of PC Utilization makes it principally appropriate for predicting individual's use and acceptance of a variety of information technologies (Venkatesh et al. 2003). According to Thompson, Higgins and Howell (1991:126), the model proposes that "the utilization of a PC by a knowledge worker in an optional use environment would be influenced by the individual's feelings (affect) towards using PCs; social norms in the workplace concerning PC use; habits associated

with personal computer usage; the individual's expected consequences of using a PC; facilitating conditions in the environment conducive to PC use". Thompson et al. (1991) adopted the PC Utilization model to predict PC utilization. They list the following constructs as those predicting PC usage:

i. The job-fit refers to "the extent to which an individual believes that using a technology can enhance his/her job performance of his or her job" (Thompson et al. 1991: 129).

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

iii. Long-term consequences connote "the outcomes that have a pay-off in the future" (Thompson et al. 1991: 129).

iv. Affect towards means "the feelings of joy, elation, or pleasure, or depression, disgust, displeasure or hate that is associated with an individual with a particular act" (Thompson et al. 1991: 127).

v. Social factors stand for "the individual's internalization of the reference group's subjective culture, and specific interpersonal agreements that the individual has made with others within specific social situations" (Thompson et al. 1991: 126).

vi. Facilitating conditions refer to "the objective factors in the environment that several judges or observers can agree to make an act easy to accomplish" (Thompson et al. 1991: 129). Figure 2.7 below presents the Model of PC Utilization.

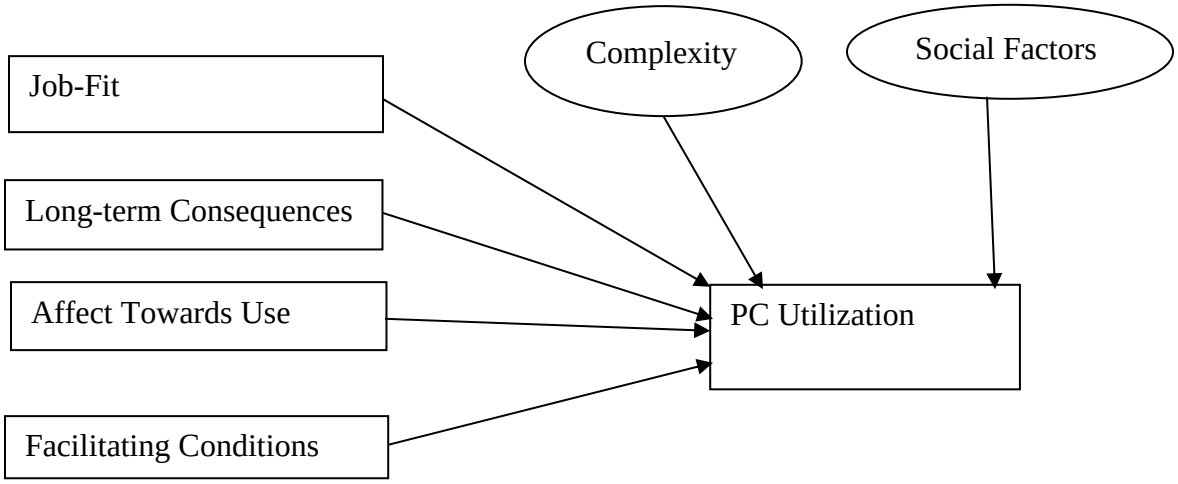


Figure 2.7: Model of PC Utilization

Source: Thompson et al. (1991).

The PC Utilization Model has its shortfalls because it concentrates more on explaining and understanding computer usage behaviour (Alabi 2016). The next section discusses the social cognitive theory.

2.8. Social Cognitive Theory (SCT)

The Social Cognitive Theory (SCT) could be traced to the Social Learning Theory (SLT), which was proposed by Albert Bandura in the 1960s. The SLT was later developed into SCT in 1986 by Bandura. The SCT postulates that learning occurs in a social setting with a dynamic and mutual communication of the environment, person and behaviour. It is unique because it emphasises the social influence as well as internal and external social reinforcements. It reflects the unique way in which an individual attains and maintains behaviour (Kwasnicka et al. 2016). However, one must also consider the social environment in which an individual executes and performs this behaviour. The SCT explains and describes one's past experiences, which determine to a large extent whether one's behavioural action will occur (LaMorte 2016). The past experiences influence reinforcements, expectancy and expectations, all of which will determine whether a person will participate in a particular behaviour as well as the person's motives for participating in that behaviour (LaMorte 2016).

The SCT elucidates how people attain and maintain certain behavioural patterns. It provides the basis for intervention strategies (Compeau and Higgins 1995). The theory claims that assessing

behavioural change relies on major factors, namely environment, behaviour and individual. Environment refers to the possible factors that can affect an individual's behaviour. It provides a framework to understand behaviour (Parraga 1991). Basically, there are physical and social environments. The physical environment comprises such features as the environmental temperature, size of a room and the availability of specific foods. The social environment comprises friends, colleagues and family members (Compeau and Higgins 1995). Bandura (1977a) notes that the environment provides a framework for behavioural and observational learning that arise when a person looks out for the actions of another person as well as the reinforcements received by the person.

The SCT has been generally applied to diverse areas of human endeavour, such as organizational behaviour, athletics, public health, as well as mental and physical health. It submits that learning takes place in a social environment in which people acquire skills, beliefs, strategies, attitudes and knowledge by observing others. Others executing a behaviour, like making use of a computer system, influence the individual's perceptions of his/her ability to execute the behaviour/self-efficacy, and the possible expected outcomes (Bandura 1977a).

The SCT states that human motivation and action are broadly regulated by prudence. This proactive control mechanism includes expectations that may refer to outcomes and consequences of undertaking a specific action. The SCT identifies some vital factors that influence behaviour (Bandura 1977b). Perceived self-efficacy is seen as the first factor concerned with people's beliefs which have the ability to perform a particular action required to achieve the desired outcome. The theory refers to outcome expectancy as the core construct mainly concerned with people's beliefs about the likely consequences of their action. Apart from the two aforementioned constructs (perceived self-efficacy and outcome expectancy), the theory also involves goals as well as perceived impediments and opportunity structures (Bandura 1977b). These constructs are presented in Figure. 2.8.

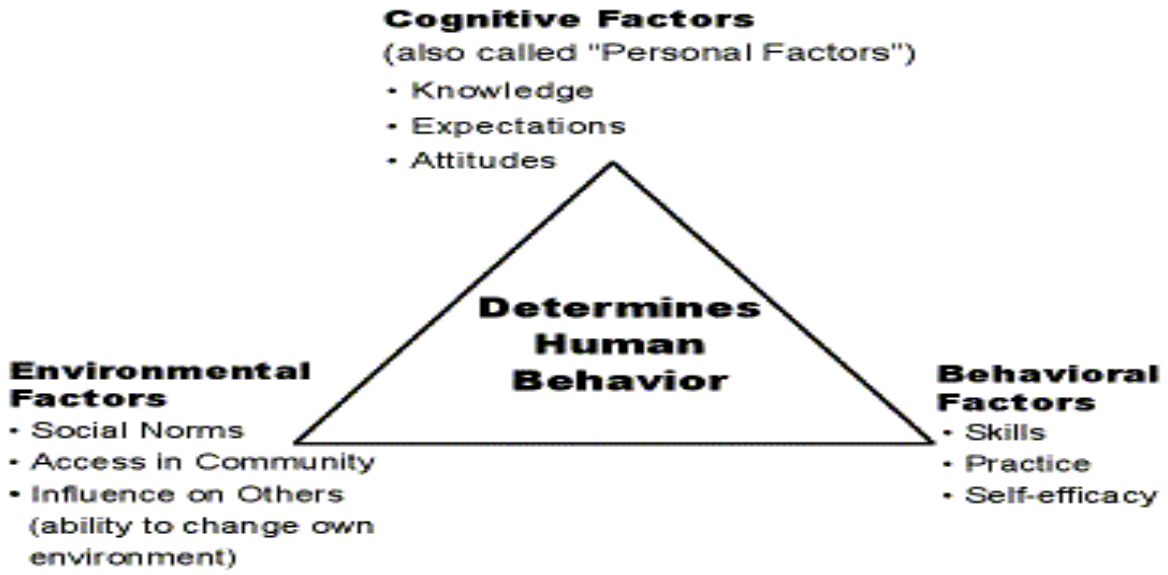


Figure 2.8: Social Cognitive Theory

Source: Bandura (1977; 1986).

Compeau, Higgins and Huff (1999) affirm that the construct of self-efficacy is very germane in SCT. Self-efficacy is described as "people's judgments of their abilities to organize and perform courses of action required to gain and attain designated kinds of performance" (Bandura 1986:391). It is focused more on judgments of what one can do with all kinds of skills possessed. Self-efficacy shows one's belief that one possesses in using information technologies (Compeau, Higgins and Huff 1999). Bandura (1986) and Hassan (2006) note that people with high self-efficacy are more likely to view difficult jobs as something to be learned rather than something to be evaded. In addition, Compeau and Higgins (1995) aver that self-efficacy has a significantly high influence on computer usage as well as those who have the ability to use computers. Hence, such people end up thriving better than those who doubt their capabilities.

Denler, Wolters and Benzon (2014) cited in Zhou and Brown (2015:20) do not only stress that SCT acknowledges the significance of the environment in determining behaviour, but also claim that people can, through self-reflection, and self-regulatory and forethought processes, employ substantial impact their own outcomes and the environment at large. Compeau, Higgins and Huff (1999) argue that an individual's intellectual skills will have an impact on his/her behaviour of using a technology, and the positive connections and interactions with the technology will also have an impact on the intellectual and cognitive perceptions.

The SCT, according to Bandura (1986), argues that environmental influences like social pressure, cognitive and other personal factors, such as personality and demographics, are important in determining behaviour. Variables such as gender, experience, qualification and age from SCT have also been examined to determine whether they play a significant role in explaining technology acceptance (Losh 2004; Colley and Comber 2003). Bandura (2001) employed SCT to decide amongst three modes of agency – the direct personal agency; alternative agency, which relies mainly on others to perform request and secure desired outcomes; and collective agency applied through interdependent effort and social coordination. Transnational interdependence is placing a quality on collective efficacy in order to exercise control above personal and national life (Bandura 2001).

In spite of the use of SCT in numerous studies, scholars like Dombeck (2008) and Nevid (2012) have criticised the theory because it concentrates more on environmental predictors, but pays little attention to cognition, individual variation and developmental changes. LaMorte (2016) outlines the limitations of SCT, which must be critically considered when adopting the theory for any study. These are listed below:

i. SCT focuses more on learning processes and by so doing neglects hormonal and biological predispositions that might influence behaviour, irrespective of past expectations and experiences;

ii. SCT postulates that changes in the environment will automatically lead to changes in the person;

iii. SCT can be wide-reaching; as such, it can be difficult to operationalize the entire construct;

iv. SCT does not emphasize motivation, it rather makes reference to past experience. Little attention was given to this factor; and

v. SCT is lightly organized. It is based only on the dynamic relationship between behaviour, person and environment (LaMorte 2016).

It can be deduced from the foregoing that SCT fails to focus on motivation which can enhance knowledge sharing as well as its constructs being difficult to operationalize, making it not suitable for this study. The preceding takes us to the diffusion of innovation theory in the next section.

2.9 Diffusion of Innovation Theory (DOI)

DOI was originally discussed by Gabriel Tarde, a French sociologist, in 1930 (Toews 2003). The adopter categories were introduced and later used in the DOI theory and popularized by Rogers (1999). Rogers was also credited with introducing the perception of opinion leaders and followers as well as media interactions to influence these two groups (opinion followers and opinion leaders). The DOI theory has been perceived over time as a valuable model used for guiding technology innovation where innovation is presented and modified in such a way that all the needs of adopters will be met.

The Diffusion Innovation Theory is synonymous with the Innovation Diffusion Theory (IDT) founded by Moore and Benbasat (1991). The IDT basically describes the adoption pattern and appropriate mechanism for predicting if a new invention (technology) will be successful or not. Adoption involves "full use of an innovation as the best course of action available" (Rogers 1983:21). Within the context of information studies research, adoption is "the acceptance or use of a new product or technology" (Khasawneh, cited in Suebsin and Gerdsri (2009:2683). The DOI claims that perception will affect users' adoption (Moore and Benbasat 1991; Rogers 1995; Plouffe, Hulland and Vandenbosch 2001).

The continuous adoption and use of a technological innovation symbolizes different behavioural intentions. Technology adoption refers to the initial use of a new technology at all levels of individual endeavour, while technology usage is ensuring continued use of a technological innovation subsequent to adoption at all levels of individual endeavour (Karahanna, Straub and Chervany 1999). Adoption is a succession of an action that an individual goes through over time, which is frequently based on emotional, cognitive and conceptual concerns (Straub 2009).

Diffusion of innovation theory by Rogers (1999) is the most suitable when examining technology adoption in higher institutions of learning and educational environments (Parisot 1995; Medlin 2001). Most of the research on diffusion involves technological innovations. Rogers (2003) used the word "technology" and "innovation" as synonyms. According to Rodgers (2003:13), technology refers to a "design for influential action that condenses in the uncertainty in the cause-effect correlations involved so as to achieve a desired result". It is composed of hardware and software. Hardware refers to "the tool that embodies the technology in the form of a material or physical object," while software is "the information base for the tool" (Rodgers 2003:13).

The DOI is the process that occurs as an individual adopts a new idea, practice, philosophy, product and so on. As observed by Dooley (1999) and Stuart (2000) cited in Sahin (2006:14), the theory has been widely used by various disciplines, like public health, history, political science, economics, information science, technology, education and computer science. Rogers' diffusion innovation theory is regarded as a widely used theoretical framework in the field of technology adoption and diffusion. "The first research conducted was on attributes of innovation and their rate of adoption among farmers" (Rogers 2003:223). Instant studies, like Parisot (1995), Bussey, Dormody and Van Leeuwen (2000) and Medlin (2001), support the use of Rogers' diffusion of innovation theory for examining technology adoption in institutions. The theory is shown in Figure 2.9 below.

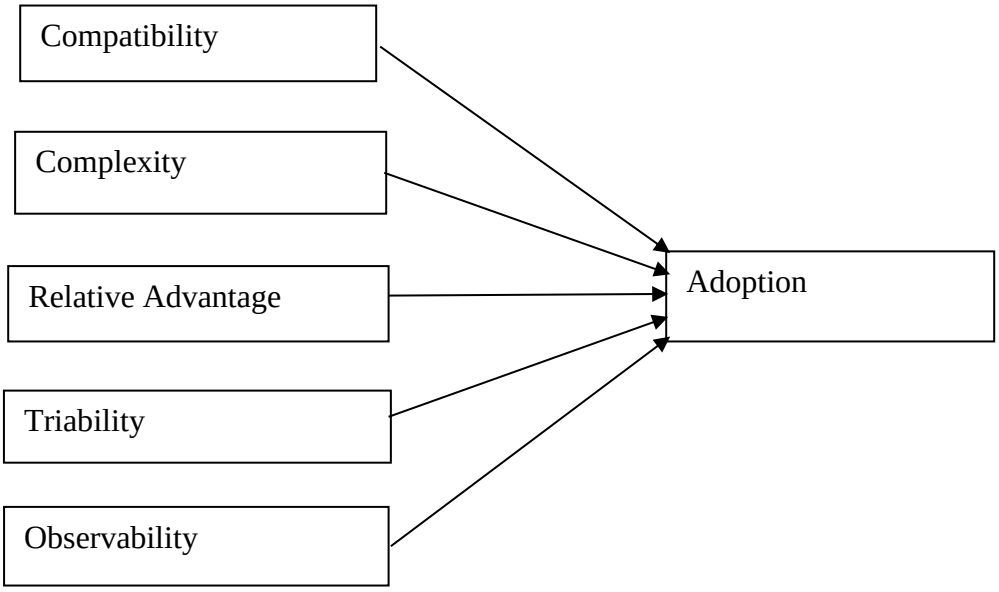


Figure 2.9: Diffusion of Innovation Theory (DOI)

Source: Rogers (1995)

Rogers (2003) states the attributes of an innovation to contain five user qualities:

i. Compatibility;
ii. Complexity;
iii. Relative advantage;
iv. Triability; and
v. Observability.

Compatibility refers to the degree to which an innovation is consistent with the existing technical environment. Compatibility also integrates existing past experience, values, as well as needs of potential adopters. Complexity deals with the degree to which an individual finds it difficult to understand and use technology. Relative advantage refers to the degree to which an individual perceives the innovation to be a benefit and improve technology use. Triability is the skills to which an individual can test the technology before agreeing on whether to adopt it. Observability refers to the degree to which librarians perceive the visibility results and benefits of using technology (Moore and Benbasat 1991).

In critiquing DOI, Meyer, Sivakumar and Nakata (1999) argue that the model lacks cohesion, which makes it stagnant and difficult to apply with uniformity to new problems. Damanpour (1996) notes that DOI is difficult to measure owing to the complexity in the human and humans' networks. DOI is said to be extremely difficult to measure the precise cause of adoption of an innovation. Plsek and Greenhalgh (2001) submit that DOI can never account for the whole constructs or variables and, as such, this might miss critical analysis of adoption. In addition, the diversity of constructs in DOI has led to inconsistency and unstable results in research as well as reduction in empirical value (Downs and Mohr 1976).

These shortcomings of DOI notwithstanding, the UTAUT is still considered more appropriate because of its richness, robustness and recency. While DOI as a theory basically addresses technology adoption, acceptance and use, UTAUT on the other hand, extends beyond technology usage to cover other phenomenon like knowledge sharing (See table 2.1). In reality, the use of UTAUT overtime has proved its reliability, richness and robustness. It is very comprehensive and recent in nature.

Rogers (2003) situates the critique of DOI research into four major groups. These are individual-blame bias; pro-innovation bias; issues of equality; and recall problem. The pro-innovation bias proposes that all innovations are positive and innovations should be adopted. The preceding criticism indicated that DOI fails to explain all the constructs which might cause adoption of the theory. Furthermore, the theory lacks cohesion and consistency which makes it difficult to apply to new problem, hence, making the theory not suitable for the present study. The preceding takes us to the next section which discusses unified theory of acceptance and use of technology.

2.10. Unified Theory of Acceptance and Use of Technology (UTAUT)

Technology acceptance is viewed to mean the manner in which individuals adopt and accept to use a technology (Louho, Kallioja and Oittinen 2006). Users' acceptance of technology refers to the demonstrable, enthusiasm and readiness within an organization or user group to adopt IT in supporting a specific task it is designated to perform (Dillon and Morris 1996). Therefore, acceptance can be regarded as the role of user involvement in using technology. It is the "critical factor in determining the success or failure of any technology and acceptance has been conceptualized as an outcome variable in a psychological process that users go through in making decisions about technology" (Samaradiwakara and Gunawardena 2014:22).

Oye, Iahad and Ab-Rahim (2014) submit that technology is valueless, except when it is accepted and utilized. Technology acceptance is crucial owing to the increased benefits associated with access to the emerging technologies in the supply of information (Suvarna and Godavari 2012). Scholars are concerned with identifying why an individual accepts information technology for evaluating, designing and predicting how users will react to how emerging technology can be improved (Samaradiwakara and Gunawardena 2014). The major aim of most studies is to examine how to promote the use of technology and to elucidate what hinders technology acceptance and use (Kripanont 2007). Scholars like Oye, Iahad and Ab-Rahim (2014) proposed models and theories of technology acceptance to explain and predict user technology acceptance to describe fast transformation in technologies and environment.

The Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed and validated by Venkatesh, Moris, Davis and Davis (2003). It provides a theoretical basis for enhancing research in the field of information systems or information technology (Alatawi, Dwivedi, Williams and Rana 2012). The UTAUT is the most current theory of technology acceptance. It has been a suitable framework for researchers in the discipline of information technology, who face difficulties in choosing the appropriate model from several other models (Venkatesh et al. 2003).

The UTAUT was formulated based on consolidation of eight theories of technology acceptance that have been used by previous research to explain knowledge management, information system and user behaviour. The eight theories are Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM), Motivational Model (MM), Combined TAM and the TPB (C-TAM-TPB), PC Utilization model (MPCU), Diffusion of Innovation Theory

(IDT) and Social Cognitive Theory (SCT) (Venkatesh et al. 2003; Ghobakhloo, Zulkifli and Aziz 2010).

The theory suggests four fundamental constructs. These are performance expectancy; effort expectancy; social influence; and facilitating conditions, which directly determine behavioural intention towards knowledge sharing, as well as adoption and use of technology. The four constructs are moderated by gender, age, experience and voluntariness of use, which are also regarded as moderating factors (Venkatesh et al. 2003). The following are the four main constructs that determine acceptance and use of technology in the UTAUT theory and the similarities of these variables to the eight theories (Venkatesh et al. 2003):

i. Effort Expectancy (EE): This is the "degree of ease associated with the use of the system" (Venkatesh et al. 2003:450). The constructs in other theories that have the same meaning with the concept of EE are perceived ease of use (TAM), and complexity (MPCU and DOI).

ii. Performance Expectancy (PE): This is the "degree to which an individual believes that using the system will help him/her to attain gains in job performance" (Venkatesh et al. 2003:447). The constructs in the other theories which capture performance expectancy concept are job-fit (MPCU); outcome expectancy (SCT); extrinsic motivation (MM); perceived usefulness (TAM and combined TAM-TPB); and relative advantage (DOI).

iii. Social Influence (SI): This is defined as "an individual's perception that a person who is relevant to him/her considers he/she should use the new system" (Venkatesh et al. 2003:451). Related constructs in existing theories are subjective norms (TRA); (TAM2) (TPB/DTPB and combined TAM-TPB); image (DOI) as well as social factors (MPCU).

iv. Facilitating Conditions (FC): This 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. 2003:453). This construct is similar to the following in existing theories: facilitating conditions (MPCU); perceived behavioural control (TPB/DTPB and combined TAM-TPB); and compatibility (DOI).

Venkatesh et al. (2003) stress that the above constructs have four moderating variables that influenced the UTAUT construct:

i. Age: the degree to which the age of individuals affects their use of a new system;

ii. Gender: the extent to which being a female or male makes it easier to utilise a new system;

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

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

The EE and PE constructs of UTAUT are the same with perceived ease of use and perceived usefulness of TAM, while SI and FC of UTAUT can be derived from TPB. The UTAUT, TPB and TAM are specifically similar in constructs and relationships, which make current and future studies on acceptance and adoption of technology favour the use of UTAUT. Dwivedi, Rana, Chen and Williams (2011) note that researchers in the past have critiqued the over-exploitation of TAM, which eventually affects the expansion of other theories and models in information studies.

EE and PE are particularly used to assimilate variables such as the ease of use and perceived usefulness. The model recommends that the EE construct can be highly significant in determining whether the user will accept information technology or not. The model further explains that individual differences affect technology use. The UTAUT theory, as presented in Figure. 2.10, was developed to clarify users' behavioural intention in sharing knowledge, using an information system and increased usage behaviour (Alshehri, Drew and AlGhamdi 2012).

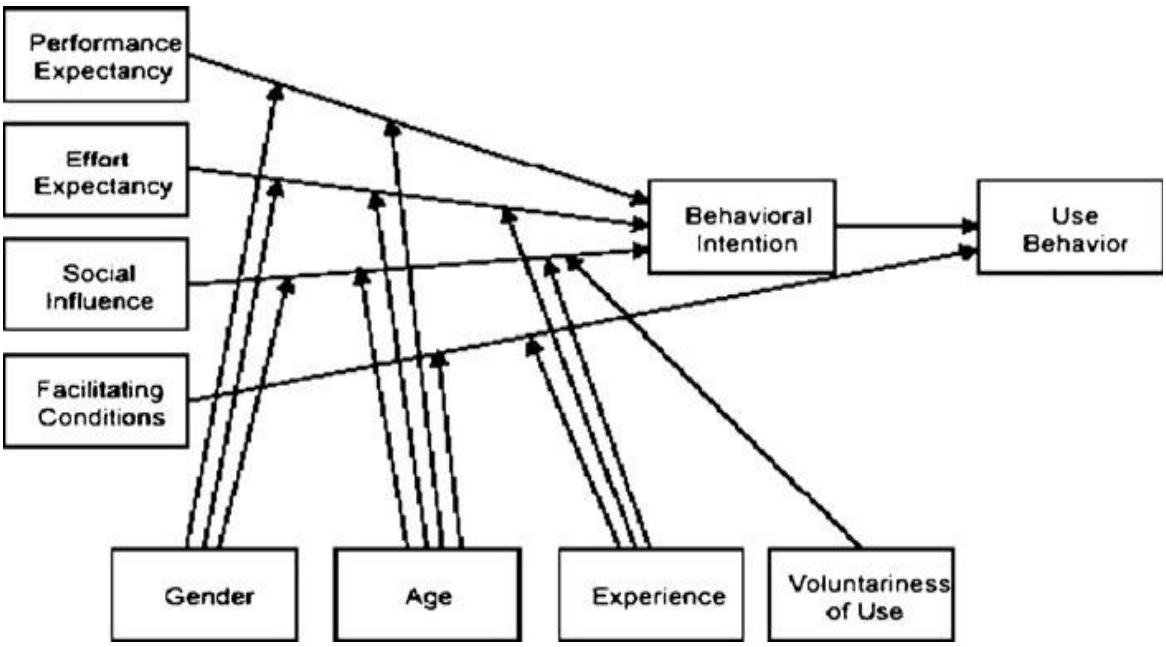


Figure 2.10: Unified Theory of Acceptance and Use of Technology

Source: Venkatesh et al (2003)

TAM had been the most widely used theory in the study of technology adoption and use in the context of information science and technology prior to the emergence of the UTAUT (Dwivedi, Williams and Lal 2008). Today, the UTAUT has emerged as the most widely used theory in information technology acceptance research. The model has been tested in several organisational settings (Akbar 2013). Research that has validated the UTAUT theory include a framework on employees' acceptance and use of IT in Saudi Arabia (Al-Gahtani, Hubona, and Wang 2007); the acceptance of educational technology in Turkey (Göğüş, Nistor and Lerche 2012). Besides, the UTAUT has also been tested in other disciplines, such as healthcare (Venkatesh, Sykes and Zhang 2011); business organisations and firms (Anderson and Schwager 2004); government organisations (Olasina 2014) and the educational sector (Birch and Irvine 2009). It has been used basically to investigate predictors of technology adoption, acceptance and use from a broader perspective, unlike earlier theories, which are specifically considered for other areas (Olasina 2014).

Ghobakloo, Zulkifli and Aziz (2010:11) assert that the UTAUT is "robust across cultures through increasing understanding of cultural impacts on IT acceptance" and it elucidates behavioural intention of sharing knowledge and behaviour towards the use of technology. Studies that have

confirmed the robustness of UTAUT include a research on employees' use and acceptance of computers in Saudi (Al-Gahtani, Hubona, and Wang 2007); technology acceptance for higher institution of learning in Turkey (Göğüş, Nistor and Lerche 2012); utilization of mobile communication in Taiwan (Wu, Tao and Yang 2007). These studies established that PE and FC had a highly significant influence on the BI (Behavioural Intention) of people in using mobile communications in Taiwan as well as virtual services in Ugandan university libraries (Tibenderana and Ogao 2009).

Gupta, Dasgupta and Gupta (2008), in a study on ICT adoption in government organizations in a developing country, investigated behavioural adoption using UTAUT. They argue that PE, EE, SI and FC have a high significant influence on ICT use and knowledge sharing. AlAwadhi and Morris (2008) examined the adoption of e-government services using UTAUT. The study established that PE, EE and SI determine employees' behavioural intention to share knowledge.

Kaba and Toure (2014) applied UTAUT to understand behavioural intention in using social media networking site by adolescents in developing countries. A questionnaire was used as the major instrument for data collection. The findings showed that PE positively influenced behavioural intention, while the interaction of PE, gender and age were insignificant. Furthermore, the effects of EE and its moderating variables on behavioural intention were insignificant. Also, most of the respondents had embraced technology especially the Internet and were using it reliably.

Moreover, the UTAUT has been noted to increasingly draw researchers' attention and has been used to underpin various studies on technology acceptance and use, information technology and information system studies in different countries (Zhou, Lu and Wang 2010). Studies that have applied UTAUT include: "factors explaining the acceptance, actual use and satisfaction of nurses using an electronic patient record in acute care settings" (Maillet, Mathieu and Sicotte 2014); understanding the "Internet banking adoption" (Martins, Oliveira and Popovic 2014); "an empirical study of home healthcare robots adoption using UTAUT model" (Alaiad and Zhou 2013); understanding "website design quality and usage behaviour: unified theory of acceptance and use of technology" (Al-Qeisi et al. 2014); and examining the "critical factors for cloud-based e-invoice service adoption in Taiwan" (Lian 2015). Findings of the aforementioned studies indicate that UTAUT is applicable to people of diverse genders, degrees and levels of IT competence, knowledge sharing applications, and cultures, as well as to a broad variety of

technologies. This signifies its reliability and suitability. Essentially, it provides a useful tool for understanding the possible success of the introduction of new technology. The theory has also helped in aiding comprehension of what the drivers of acceptance and use are, particularly among users who are less likely to accept or adopt and use new technology (Venkatesh et al. 2003).

Several studies have suggested the modification of UTAUT in diverse areas. Chiemeke and Evwiekpaefe (2011) recommended a framework to modify the UTAUT to study the utilization of the Internet in Nigeria. The UTAUT was modified by adding some factors that determine user adoption and use of electronic commerce in Nigeria. Factors such as culture, electricity supply, reliability, cost, trust, security and government regulations were proposed for inclusion in the theory. Wang and Wang (2010) proposed the extension of the theory to establish gender differences in accepting mobile Internet in Taiwan. Their study modified the theory by adding constructs such as perceived value, computer self-efficacy and perceived playfulness. Wang and Wang's study further expunged facilitating condition, experience, use behaviour, age and voluntariness and behavioural intention as dependent variables. BenMessaoud, Kharrazi and MacDorman (2011) also modified UTAUT by adding such variables as leadership and attitude towards the use of technology to its constructs to have a better understanding of the motivation behind whether to reject or adopt machines, like assisted surgical procedures.

Even though the theory is recent and strong and has been adopted by various scholars in diverse contexts, it has been criticised by Lin and Bhattacherjee (2008) for its failure to fully capture those external factors that impede the performance of behaviour. The theory struggles with the constraint of being predictive and fails to provide suitable explanations necessary for use in designing interventions that foster adoption (Brown, Dennis and Venkatesh 2010). Van Raaij and Schepers (2008) critiqued the UTAUT theory as being less thrifty than TAM and TAM2. They viewed the labelling and grouping of items and constructs as being difficult, resulting from a variety of combined unrelated items to reflect a single psychometric construct.

In spite of its criticisms, the UTAUT has been empirically proven to be the most outstanding of the eight individual models listed above (Taiwo and Downe 2013; Akbar 2013; Oliveira, Faria, Thomas and Popovi 2014). Venkatesh et al. (2003) aver that the previous models were able to describe approximately 40% of technology acceptance, whilst UTAUT was able to explain 70% of the intention to use technology. In addition, it incorporates eight different theories, making it

one of the most comprehensive and essential theories for explaining information technology adoption, acceptance and use (Quigfei, Shaobo and Gang 2008). The theory is noted to be applicable to people irrespective of gender, extent of information technology competence, knowledge sharing, culture, as well as to a large variety of available technologies; this underscores its richness and reliability (Bhatiasevi 2016).

In addition, Venkatesh et al. (2003) and Bagozzi (2007) affirm that the theory has been favoured with the following essential features as a well-enriched theory to explain technology acceptance and user's behaviour:

i. the UTAUT has higher illustrative power;

ii. eight models (TRA, TPB, TAM, MM, Combine TPB and TAM, Model of PC Utilization, DOI and SCT) have been established and discussed in forming the determinants of usage behaviour and behavioural intention of technology in building the UTAUT;

iii. the use of empirical and conceptual similarities and inequalities across the eight consolidated models to formulate the conceptual framework of the UTAUT theory; and

iv. emergent numbers of empirical proofs in the last 5-6 years in favour of UTAUT (Venkatesh et al. 2003) and Bagozzi (2007).

The strengths of UTAUT make it the most appropriate theoretical framework for this study. Many researchers (Olasina 2014; Alabi 2016; Adeleke 2017; Okite-Amughoro 2017; Bakare 2017) in the field of Library and Information Science have adopted UTAUT to study technology adoption, acceptance and use. However, it can also be used to study other phenomena, like knowledge sharing, because SI and FC can determine knowledge sharing among librarians in the library. Kasim (2015) found that all UTAUT constructs - performance expectancy, effort expectancy, social influence, and facilitating condition have shown a positive relationship with virtual knowledge sharing behaviour among public sector in Malaysia. Furthermore, its constructs and the constructs in the other eight consolidated theories explain the same phenomena. For instance, effort expectancy in UTAUT explains the same phenomenon with perceived ease of use in TAM and Complexity in DOI and MPCU (Venkatesh 2003).

2.11. Social Exchange Theory (SET)

Social Exchange Theory (SET) was propounded by Homans George a sociologist in 1958. SET embraces the basic concepts of modern economics as a bedrock used in analyzing human behaviour as well as relationships to dictate social structure complexity. SET was originally developed for the purpose of analyzing human behaviour and often used for investigating individual's knowledge sharing bahaviour (Maiga 2017). The theory stipulated that individuals relate with one another based on cost and benefits of self-interest analysis (Liu et al. 2011).

SET emphasises more on significant norms, especially formal inter-organisational exchange behaviour and affirms that both organisations and individuals interact with the view of maximizing their rewards and costs. Furthermore, individuals create social relationship with the aim of maximizing benefits with another by sharing their available resources like goods; love; money; services and knowledge (Cropanzano and Mitchell 2005).

SET perceived social interaction, reward and trust as the source of relationships with one another (Liang, Liu and Wu 2008). The theory states that “if participants feel the rewards received from being in a given relationship outweigh the costs of being in that relationship, then the relationship will remain intact" (Maiga 2017:13).

2.12. Summary

This chapter highlighted and examined a number of theories/models that could predict adoption and use of technology. A theory is a general principle that is capable of explaining a certain phenomenon. Also, a theory is capable of predicting future occurrences that have been tested overtime through experiment, while a theoretical framework is viewed as the structure capable of supporting the theory of a study. Therefore, the working definition adopted for this study for a theory was given as an “organised body of concepts and principles intended to explain and predict a particular phenomenon” (Leedy and Ormrod 2005:4).

Some of the theories/models that were identified include TAM by Davis (1989); TRA by Ajzen and Fishbein (1980); MPCU by Thompson, Higgins and Howell (1991) etcetera with UTAUT appearing as the most recent and prominent among all the theories.

Ten theories were reviewed out of which UTAUT was chosen to drive this study. The four constructs in UTAUT were discussed. The aforementioned strengths of UTAUT make it a suitable theoretical framework for this study. Many studies used UTAUT to explain users' adoption and acceptance of technology use. However, there is paucity of studies that adopt UTAUT to study other phenomena like knowledge sharing. Considering the preceding facts, it is evident that the UTAUT will provide a concrete foundation for explaining the reason users should reject or accept a technology as well as their intentions for sharing knowledge in university libraries. The review of literature for this study will be detailed in Chapter Three.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter reviewed literature on ICT skills on knowledge sharing among librarians. Kothari (2013) postulated that there are basically two types of literature - the empirical literature consisting of studies that are similar to the one proposed while the conceptual literature is mainly concerned with the concepts and theories. Literature review in a study critically account or report a previous or past study found in the related literature in a particular study under investigation (Boote and Beile 2005). Literature review is designed to provide an overview of the subject of interest in order to improve the understanding of the subject under study. According to Hart (1998:13), the purpose of literature review in research comprise the "selection of available documents sourced from both printed, electronic and unpublished thesis on a particular topic of interest, gathering information, ideas as well as observation written from a particular viewpoint and the effective appraisal of these documents in relation to proposed theme". Boswell and Cannon (2014) affirm that the purpose of reviewing literature in research is to establish what is already known and unknown about a specific phenomenon which has not been completely resolved in practice. Mugenda and Mugenda (2003) affirm that literature review comprises of reading, finding, evaluating and examining the outputs of past studies so as to enhance the understanding of the area of investigation. A literature review is regarded as the comprehensive study as well as explanation of literature that addresses an explicit topic (Aveyard 2014).

The study aimed at examining the ICT skills on knowledge sharing among librarians in federal university libraries in South-West Nigeria. The study proposed five research questions namely:

(1) What is the level of ICT skills among librarians in federal university libraries in South-West Nigeria?
(2) What are the effects of ICT on knowledge sharing among librarians in federal university libraries in South-West Nigeria?
(3) What are the methods of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

(4) What is the level of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?
(5) What are the factors affecting knowledge sharing among librarians in federal university libraries in South-West Nigeria?

The theoretical and empirical literature reviewed in this chapter were obtained from both electronic and print library resources in databases, such as (ProQuest, Jstor, Emerald Insight, Bookboon, World Cat) e-books, books, journals, conference proceedings, e-theses, theses as well as other related media. Literature was reviewed thematically under the following sub-headings: level of ICT skills among librarians; effects of ICT skills on knowledge sharing among librarians; level of knowledge sharing among librarians; methods of knowledge sharing among librarians, and factors affecting knowledge sharing among librarians. However, it is very important to explain the concept of knowledge management (KM) which encompasses the following knowledge processes: application, creating, capturing and sharing. Thus, knowledge sharing is referred to as KM foundation (Bircham-Connolly, Corner and Bowden 2005).

3.2 Concept of knowledge management

Before delving into the present literature on knowledge sharing among librarians in Federal university libraries in South-West Nigeria, it is significant to discuss briefly knowledge management as a broader issue related to knowledge sharing. This explains why knowledge management has received much attention in the literature, and why it is essential for professional librarians to share their knowledge. However, it establishes the significance of knowledge sharing as a way of satisfying and sustaining the flow of knowledge within the university libraries to achieve team work and productivity. Knowledge management (KM) has been conceptualised as the process of codifying, storing, transmitting, exchanging as well as using knowledge in libraries and other organisations (Collison and Parcell 2001). However, due to the rapid development in emerging technologies, the management practice of knowledge sharing is now increasingly becoming more knowledge-focused (Collison and Parcell 2001). Accordingly, Baird and Henderson (2001) conceptualised KM as identifying as well as leveraging the individual and collective knowledge in libraries so as to become more competitive in-service delivery.

According to Wolf (2011), knowledge management is defined as a collaborative as well as combined approach for creating, capturing, organising, accessing, sharing and utilising intellectual assets of the enterprise. Omotayo (2015:2) identified KM as a "framework used for designing organisational plans, structures, processes and strategies in order for organisations to utilise what it knows to learn both social and economic value for its potentials customers and the community at large". Knowledge management is broader and contains leveraging the worth of the organisational know-how as well as knowledge that accumulates over a period of time (Wolf 2011).

According to Frost (2017), knowledge is categorised into two namely: explicit and tacit knowledge. Explicit refers to codified knowledge, that is, documented while tacit refers to non-codified knowledge and often gained through personal experience. Botha, Kourie and Snyman (2008) postulated that tacit and explicit knowledge should be viewed as mixture rather than conclusive points. Wellman (2009) stressed that explicit knowledge is easy to identify, retrieve and stored. Nevertheless, explicit is easily handled by knowledge management system, which is highly effective to facilitate information retrieval, storage as well as modifying documents and texts (Frost 2017). Botha et al. (2008) argued that explicit knowledge can be found in databases, memos, notes and documents. On the other hand, Brown and Duguid (1991) described tacit knowledge as intuitive, hard to define and is basically based on experience. Tacit is personal in nature and context dependent. Wellman (2009) perceived tacit as the most valued sources of knowledge and might probably leads organisations to breakthrough.

Hau, Kim, Lee and Kim (2013) confirmed that reciprocity, enjoyment, as well as social capital contribute importantly to enhancing workers' intentions to share tacit and explicit knowledge. However, the provision and application of appropriate technologies to support KM is enormously influenced by understanding what KM is. Therefore, in making recommendations for strategies to support and promote knowledge sharing, then it is germane to eliminate delusions about KM and its most paramount process, knowledge sharing (Harker 2015:12). For effective knowledge sharing in any facet of human endeavours, supported and suitable ICT/IT infrastructure must be introduced and embraced.

3.3 Level of ICT skills among librarians

ICT is viewed as the use of computers and other technologies devices to share; preserve; acquire; process; store; organize; create and disseminate information (Ogunsola, Akindojutimi and Omoike 2011). Edom (2007) perceived ICT as the technological tools that are used to access; preserve; gather; retrieve; process and dissemination of information with little or no delay. ICT skill has been viewed differently by various scholars. Quadri (2012) referred the term as ICT skills; Susana, Peón and Ordás (2009) viewed it as IT competency; Noor and Salim (2011) regarded the term as ICT know-how. ICT skills refer to the capabilities or abilities to maximally use the technologies to share, store, process, organize, organize and disseminate information (Umeji, Ejedafiru and Oghenetega 2013:71).

ICT skills are regarded as an important and easy key to knowledge sharing among librarians and other information professionals, with innumerable benefits. Hence, ICT skills are great motivators to efficient knowledge sharing as compared to traditional methods. Such skills improve and boost knowledge sharing by eliminating temporal and spatial hindrances between knowledge personnel (Hendriks 1999). This is particularly true as ICT has the capability for greater coverage and scope than traditional methods, when information is shared among librarians.

Satapthy and Maharana (2012:1) opined that ICT tools are being deployed into the university libraries to manage and disseminate library resources more efficiently and effectively as well as to satisfy users' information needs. The authors also confirmed that information professionals including librarians must possess and acquire adequate ICT skills so as to share and manage the contemporary libraries, specifically the university libraries. In complimenting the above statement, Ayoku and Okafor (2015:521) stressed further that it is germane to know the librarians' knowledge and degree of ICT skill competences, as well as constraints which impede them from possessing those skills.

Information professionals like Librarians, Knowledge managers, Archivists, Database managers, Information analysts, Health information managers, Information specialists, Customer relation managers and Project managers (Al-Hawamdeh and Foo 2001:6) have been called upon to embrace and possess ICT skills that will enhance knowledge sharing and foster services delivery in the university libraries. ICT skills is the ability and competence to use digital technologies and

communication tools in solving information problems alongside with the ability to use technology efficiently as a tool to organise, store, retrieve, evaluate, communicate and share information among professional colleagues and community of practice (Mohamed Haneefa and Abdul Shukoor 2010). Sankari and Chinnasamy (2014: 9) asserted that in this digital era, it is compulsory for the information professionals particularly librarians to use the computers and other ICT devices in their daily routines. Shidi, Igyuve and Tyonum (2015) and Quadri (2012) submitted that ICT skills are important as it is essential for networking of digital library services and resource sharing. The authors also stressed that library routines require sufficient ICT skills so as to achieve more efficient library operations as well as providing exceptional library and services delivery. In this vein, Hafeez-Baig and Gururajan (2012:2438) averred that both "ICTs and ICT infrastructure play a vital role in the creation, development, management, acquisition and sharing of the existing knowledge among employees in business environment".

Mohamed and Abdul Shukoor (2010:59) reported that the professional assistants are more proficient in ICT skills than the assistant librarians in Calicut University, Kerala, India. The authors summarised that despite the high degree of penetration of ICT and evolution of Internet in developed university libraries, most of the library professionals in India generally still lack ICT literacy skills for knowledge sharing and services provision. Ramesh Babu, Vinayagamoorthy and Gopalakrishnan (2007) found that librarians possess ICT skills knowledge in operating systems, knowledge of online facilities, web awareness, packages and programming languages, library automation software as well as managerial and technical skills. The study corroborates the findings of Sankari and Chinnasamy (2014) who discovered that professional librarians at Engineering Colleges in Salem and Namakkal Districts have over average ICT skills on Electronic documents delivery system, Greenstone software, library software like CDS/ISIS, LIBSYS, AUTOLIB and KOHA, Windows, MS office package and Linux. The findings of Sankari and Chinnasamy (2014) were further supported by Kumar (2013) who showed high level of skills in operating systems, MS-Word and MS-Excel.

Tavassoli-Farahi, Tajafari and Tahamtan's (2014) study focused on six levels of ICT skills based on the report published by Medical Library Association (MLA). The study found that the chief medical librarians possess high ICT skills in information infrastructure including the Internet which also encompasses the Internet, Email and search engines. The study further indicated that medical librarians also possess ICT skills in areas of biology, biomedicine and health information.

Adeniji, Adeniji and Oguniyi (2011) reported that the internet is the most used tools in Nigerian academic libraries. This study contradicts the findings by Safahieh and Asemi (2010); Siddike (2010); and Mohamed, Madhu and Aswathy (2014) which reported the low levels of ICT skills (46.3%) and lack of adequate training programmes among academic librarians, and thus affected knowledge transfer in Chandigarh city libraries in India, Isfahan, Iran and Bangladesh. This finding affirms that low levels of ICT skills and inadequate training programmes are impediments to knowledge sharing among academic librarians. Kattimani and Naik (2013) reported that librarians are more competent on web design than creation of files, computers operations and folders, various operating systems, the Internet related skills as well as search engines. The study concluded that financial restrictions, excess work load and lackadaisical attitude of the library management were the major challenges in acquiring ICT skills.

The finding of Batool and Ameen's study in 2010 on librarians' technological competencies in Punjab, Pakistan revealed that majority of the librarians possess good ICT skills in word processing (formatting, applying and inserting different documents style), and the Internet (search engines, Google and emailing). The librarians posit that the internet has been helpful in disseminating information to library users, current awareness programme as well as sharing of information among colleagues in the library. Other ICT skills possessed by the librarians are computer hardware, troubleshooting maintenance and integrated library system. The findings of the study contradict that of Ahmed and Rehman (2016) who identified the lack of adequate library staff to promote ICT competencies (86% of respondents), lack of written policies (77%), lack of ICT training attendance (76%), lack of interest/motivation or nonchalant attitudes on the part of librarians as regards updating their ICT skills (32%), and fear of ICT applications, as some of the challenges encountered by librarians, particularly when sharing knowledge. In a related study by Ansari (2013) on ICT skills proficiency of librarians, it was found that librarians in both (private and public) universities need to acquire required ICT skills. The findings show that librarians are not proficient in all ICT skills listed in the study. This was earlier confirmed by Adedoyin (2005); Adomi and Anie (2006) and Ramesh Babu, Vinayagamoorthy and Gopalakrishnan (2007) who reported low level of ICT skills proficient by librarians.

Gerolimos and Konsta (2008) identified 38 skills as well as qualifications through the job advertisements. The findings revealed that skills in LIS degree (82%) and working experience skills (68%) as well as communication skills (65%) were found to be the highest skills possessed

by the librarians, while the librarians lack skills like operating system and office, Microsoft word, use of personal computer to share information within the library. Chawner and Oliver (2013) found that academic reference librarians in New Zealand possess various ICT skills which include search skills, online reference sources, social media skills, web design, hardware and software troubleshooting and so on. Al-Hawamdel and Foo (2001:7) critically analysed 10 most important skills used by information professionals to share and disseminate knowledge in both government and private sectors. The study rated information seeking skills 100% as the mostly used skills follow by social and communication skills 97%, managerial skills 91% and ICT skills 89%. The following skills were also identified as important and used by information professionals for sharing and disseminating knowledge with the sectors: analytical skills; responsive skills; proactive skills; creative and friendly skills.

According to a report by California ICT Digital Literacy Leadership Roundtable , it states that in order to improve and enhance ICT skills level of citizens and companies in the United States, a programme called CREST (Critical Enabling Skills Training) should be employed in training companies workers' through a private network provider on "Critical Skills" so as to acquire ICT knowledge (California Emerging Technology Fund 2007:31). Chao (2014:43) stressed that ICT skills have contributed immensely to personnel productivity in IT education in the United States. Chao (2014:43) and Brown (2008:337) further elaborated on the significance brought by information technology infrastructure and the proper configuration of the virtual computing environment into the IT education. Buztin (2000) developed a CHILD project in 1988 at the University of Florida United State of America. The project affirmed that students using ICTs have constantly scored higher marks on a uniform test than their counterparts in conventional or traditional classroom. This is because students using ICTs are proficient or competent in the use of ICTs tool.

Enakrire and Ocholla (2017:5) reported that university libraries in South Africa were better equipped in ICTs usage for knowledge management in relations to availability, accessibility, services and effectiveness than Nigeria. Furthermore, the study stressed that ICTs are available in South African university libraries, with limited usage due to lack of ICT knowledge, skills, experience, as well as attitudes that emanate from the external and internal influences. The above finding agreed with that of Agboh (2015:1) who identified the major challenges to ICT adoption amongst SMES in Accra metropolis as lack of internal capabilities, high cost of ICTs, low

bandwidth of the Internet connectivity, epileptic power supply, financial constraints, lack of ICT infrastructure and lack of adequate ICT skills of personnel.

Similarly, Hoskins (2005) studied subject librarians at the University of KwaZulu-Natal with regards to their ICT knowledge and skills. The study shows that a majority (93.5%) of the librarians used computers in performing their daily tasks at work. It also underlines that subject librarians generally do not have the knowledge to explore the opportunities and advantages that technology presents, nor the skills to perform the application functions and operating system. The study places greater emphasis on the major challenges faced by subject librarians, especially when sharing knowledge. These include lack of knowledge and understanding of the technology, lack of ICT skills and lack of proper training. Although librarians use ICT for task performance on a daily basis, not many of these librarians possess the adequate and real-time knowledge to fully explore the benefits of the new technology effectively for knowledge sharing. This, according to Hoskins (2005), negatively affects the knowledge sharing competencies of librarians, especially in this region.

Olok, Yagos and Ovuga (2015:7) reported that ICT skills of the healthcare professionals in government and private hospitals in Northern Uganda is moderate. It was also indicated in the study that competence level of ICT skills might assist to improve and enhance the usage of ICT tools of the healthcare professionals in hospital in Northern Uganda. In the same vein, a similar study was conducted by Rexwana, Herselman and Conradie (2010) on application of ICT in rural healthcare in South Africa and found that a majority of the respondents perceived skills associated with ICT to be a challenge that could impede e-health solution in rural healthcare centres in Eastern Cape Province. Mosha, Holmner and Penzhorn (2015) also reported that inadequate knowledge and skills on the use of social media tools as well as their benefits were identified by the knowledge workers as major hiccups to knowledge sharing.

In Nigeria, several studies have been done on level of ICT skills among librarians. Nkamnebe, Okeke, Udem and Nkamnebe (2015:29) in their study on extent of ICT skills possessed by librarians in Anambra State reported that librarians are weakly skilled in ICTs. Anyaoku's (2012) and Akande (2014) finding is in variance to the above study which reported that there should be an improved level of computer skill for librarians in Nigeria than it was asserted in the previous literature. However, the finding was in line with that of Osuigwe and Uhegbu (2012) which

affirmed that librarians in Anambra State Library Board have more knowledge of ICTs than the abilities and skills needed at manipulating the ICTs tools. A related study by Nwabueze and Ibeh (2016) found that librarians lack ICT skills which could be attributed to constraints like lack of funds, infrastructure, poor in-house training for librarians, lack of ICT implementation into LIS school curriculum; librarians' inability to partake actively in ICT related workshops, seminars and conferences. In contrast, Satapthy and Maharana (2012) and Iqbal and Khan (2017) reported in Pakistan that 99% of the librarians were highly computer literate, with high proficiency in library automation and digitization. Ojeniyi and Adetimirin (2016:14) found that lecturers in two private universities have high ICT skills in retrieving information on e-resources databases. The study further stressed that lecturers should be encouraged and motivated to update their skills as technology changes.

Olayemi, Umar, Yemi-Peters, Sokari and Haliru (2017:27) reported in their study on the application of ICT for service delivery in the serial unit of Bayero University Kano that various ICT tools/facilities are readily available in the unit studied. Lack of ICT skills, poor power supply, lack of internet access and so on were identified as the challenges to the efficiently and effectively use of these ICT facilities in the library. The study of Onyije and Opara (2013:229) corroborated the findings of Olayemi et al. (2017) who found that lack of appropriate acquisition of ICT causing low utility, low ICT skills, inadequate infrastructure support as well as high cost of ICT maintenance and servicing of equipment were the challenges hindering administrators in Nigerian institutions. Krubu and Osawaru (2011) highlighted certain factors militating ICT impact on university libraries in Nigeria as poor funding, automation at low level, inadequate training facilities and lack of ICT skills competence to share and search information resources on the part of library personnel particularly the professional librarians.

Mbagwu, Ozioko and Ogueri (2017:52) identified poor power supply, inadequate staff training, lack of funding and lecturers/teachers' lack of ICT skills as the challenges in applying ICT to library school in Nigeria. Oni, Ola and Dirmun (2017:136) reported that the students possess ICT skills such as the Internet search skills and data processing skills respectively; a majority of the students confirmed that they have average ICT skills; most of the students stressed that the ICT skills was acquired through personal effort and development. Furthermore, the study established that poor funding, lack of ICT facilities, erratic power supply, management reluctance towards ICT were major challenges encountered by the students of University of Jos when acquiring ICT

skills. Oyedokun et al. (2018) described the basic ICT skills possessed by library staff in Kwara State in which the librarians exhibited very high level of proficiency in areas like word processing (96%). Adeleke and Olorunisola (2010) observed in their study the high degree of awareness among librarians in Nigeria particularly the huge benefits derived in the use of electronic or online cataloguing and classification techniques and tools. The study found that the issue of personal computers and ICT skills are a prerequisite to the use of online tools effectively and efficiently.

Ayoku and Okafor (2015:521) found in their study that "many librarians in Nigeria are lacking IT skills". It was also indicated that IT skills of librarians will go a long way in determine the future of both research and university libraries in Nigeria. The study summarised that librarians needs to acquire more depth and scope of IT skills and knowledge so as to function efficiently in digital age. Haliso (2011) conducted a study on factors hindering ICTs use among librarians in South-western Nigeria and reported that poor institutional management, lack of ICT strategy and competent personnel to manage the ICTs facilities as well as low skill level among librarians was found to be the reasons for the inadequate use of the ICTs by librarians in South-western Nigeria. The study also identified inadequate proper budget and epileptic electricity power supply as impediments that necessitated the underutilisation of the ICTs. This finding was supported by Eze, Awa, Okoye, Emecheta and Anzodo (2013:427) who lamented that despite the aids of ICT solutions, universities owned by government are yet to utilize its full capacities in their functions. This conduct is caused by continuous dishonest practices; irregular power and the internet connectivity and accessibility; poor funding, lack of experts and ICT skills, managerial and technical support and functional policies**.**

The literature reviewed in this section shows the high level of ICT skills among information professionals (librarian inclusive) particularly in developed countries like USA, UK, Canada, Singapore and New Zealand (Al-Hawamdel and Foo 2001; California Emerging Technology Fund 2007; Gerolimos and Konsta 2008; Chawner and Oliver 2013 and Chao 2014). Furthermore, librarians in developing countries like India, Pakistan, Bangladesh also possesses good level of ICT skill (Ramesh Babu, Vinayagamoorthy and Gopalakrishnan 2007; Mohamed and Abdul Shukoor 2010; Kattimani and Naik 2013; Tavassoli-Farahi and Tahamtan 2014; Sankari and Chinnasamy 2014 and Ahmed and Rehman 2016). The reviewed literature also confirmed that there is inadequate ICT skills level among librarians in Africa like Ghana, Kenya, Nigeria, and South Africa. However, libraries in South Africa were better equipped in ICTs as compared to

other African countries reviewed. Majority of the literature reviewed employed single research method while a study (Enakrire and Ocholla 2017) used mixed methods approach. Therefore, to close this gap, the present study used Effort Expectancy (EE) from UTAUT model to explain this theme *"level of ICT skills among librarians in Federal university libraries in South-West Nigeria"* (See Chapter Two Table 1).

3.4 Effects of ICT on knowledge sharing among librarians

Dhamdhere (2015:166) described knowledge as raw facts that are yet to be processed which is known as data; information is generated based on the facts. The information generated from these facts is captured in various forms that will be available to use for researchers, students and information professionals through the use of technological systems as well as information retrieval systems (Dhamdhere 2015). Knowledge is acquired through personal experience gained over the years. Knowledge contains insight and wisdom of librarians that can be used for rational decision making. Information is defined as the combination of signs, facts, ideas, symbols, images, opinions that are capable of increasing the knowledge state of an individual (Popoola and Fagbola 2014:2). On the other hand, knowledge is viewed as an understanding that includes descriptions; facts; information as well as acquired skills via experience. Knowledge sharing is the process of transporting the personal knowledge from one person to another (Tangaraja et al. 2016). KM is principally about making available knowledge to the right person at the most appropriate time. Hence, knowledge sharing maybe the only most vital facet in the KM process, since knowledge initiatives and development depend on it (Frost 2017). The author further stressed that in facilitating knowledge sharing, KM must comprehend with the users' requirement, complexities and potential challenges with controlling sources of knowledge and handling knowledge. Hence, management is required to implement the right frameworks and systems as well as processes that will enable sharing of knowledge particularly in the library.

Yaghi et al. (2011:20) described knowledge sharing has the most frequently discussed concept of knowledge management. Knowledge Management encompasses the management of the all facets of the knowledge management procedure from creation, innovation, acquisition, taxonomy to sharing. Knowledge sharing is the most pertinent facet of the knowledge process (Yaghi et al. 2011). According to Okonedo and Popoola (2012:2), knowledge sharing is viewed as an activity that involves dissemination of ideas, information and values about the acuity between two parties

in order to agree or disagree about a phenomenon. Van Den Hooff and De Ridder (2004:119) viewed knowledge sharing as a "process where both knowledge (tacit and explicit) are mutually exchange by an individual in order to create new one". Majid and Panchapakesan (2015:30) opined that "knowledge sharing is an indispensable component of a collaborative learning process".

Majid and Panchapakesan (2015:30) further noted that the most important motives of knowledge sharing were to enhance and improve the understanding of lessons discussed in class as well as to strengthen good relationship with classmates. The study further revealed that more knowledge sharing is recorded for group assignment with the group members than with another group. Chalak, Ziaei and Nafei (2014) found in their study that 79.2% faculty members in Iranian Library and Information Science (LIS) Department indicated that knowledge sharing had assisted in organising their individual knowledge asset, while 93.7% confirmed it helped in overcoming the challenges which they might encounter in the LIS profession.

Virkus (2012) argues that knowledge sharing as a process is increasingly important to university libraries as most libraries are now considered to function in a knowledge economy. Dhamdhere (2015:172) reported in a survey on importance of KM among higher educational institutes in India and found that librarians and other information professionals are sharing their knowledge with one another through technology particularly the internet. The study further clarified that ICT as a medium of sharing knowledge is good for research development, and also enhance librarians' knowledge sharing in a consortium. This study was in tandem with that of Anna and Puspitasari (2012:7) who reported a study on knowledge sharing in Indonesian university libraries and found that ICT is significant to support knowledge sharing, particularly in the digital age. The study further affirmed that ICT skills acquired allow librarians to "share in their free time and anytime". In addition, the study also lamented that ICT facilities are essential in developing discussion room with relevant equipment such as computer, projector and the internet networks so as to foster knowledge sharing and encourage virtual collaboration.

In corroborating Anna and Puspitasari's (2012) findings, Nazim and Mukherjee (2012: para. 1 line 5) elaborated on the implementation of knowledge sharing strategies in university libraries in India. The author found that intranet networks significantly aid exchange of knowledge as well as creating gateways to information and library resources. Furthermore, the study observed that most university libraries in India are using both content storage and property documents for easy

information retrieval. Also, the advent of web 2.0 tools has made a remarkable change in the relationship between library users and the librarians in communications and sharing of information. IFLA KM Satellite Meeting (2012) identified the benefits of knowledge sharing in special libraries in Athens, Greece. The following advantages were highlighted:

i. Knowledge sharing enables better decision making in the library;
ii. It inspires and motivates free flow of ideas;
iii. Improvement of customer services as well as satisfaction in the library; and
iv. It enhances collective library memory.

Shahid and Alamgir (2011:3) revealed that if ICT are effectively used, they will reduce some knowledge sharing barriers, especially time and space barriers. Hendriks (1999:93, 94) postulates on the huge benefits brought by ICT and related skills with regards to knowledge sharing among knowledge workers in a workplace. The author further highlighted the benefit that ICT has brought in a university library to enhance knowledge sharing:

i. ICT has brought about lowering some obstacles involved in sharing knowledge
ii. ICT has improved knowledge sharing through teleconferencing and collaboration with one another (Hendriks 1999:94).

Enakrire (2015) lamented on the effects of ICT skills on knowledge sharing. The author stressed that ICT skills facilitate easy access and retrieval of information from the library's e-resources without physical visitation to the library wall. The study further confirmed that availability and accessibility of ICT tools and skills seem to be in greater effect, as librarians in South Africa were able to use them to disseminate information as well as sharing knowledge and other library routines. The findings of Enakrire (2015) supported the result of Quadri and Abiodun (2017:38) which found that adequate ICT infrastructure are essential for the successful accessibility and utilization of libraries information e-resources needed for teaching, learning, research. The authors further submitted that competencies of ICT skills to access enormous amount of information combined with the ability of students and librarians to convey this information from a particular place to another has tremendous influence on sending; storing; retrieving as well as disseminating information in the libraries.

Mayekiso (2013) indicated that knowledge sharing occurred in a formal way in the library. The author also reveals that the library lacks a clear knowledge sharing strategy. However, organisational culture and structure did not permit easy knowledge sharing among professional librarians in South Africa. This finding was in tandem with that of Muchaonyerwa (2015) who found that knowledge created and acquired is not shared in the library, the reason being that the organizational culture and structure is not allowing knowledge sharing in South African university libraries. Nguyo, Kimwele and Guyo (2015:1) indicated in their study that 65.2% of any positive change in knowledge sharing among state sectors in Kenya can be ascribed to ICT. The study further established that ICT tools contributed about 70.1% of positive variability in knowledge sharing; 89.4% in ICT infrastructure; 87.3% in ICT skills, while 97.2% of structural aspects of ICT were found to positively affect variability in Knowledge sharing.

Lawal et al. (2014:30) stressed that knowledge sharing make faculty members in Nigerian universities to be current and keep abreast with up-to-date information in their respective professional areas. Akparobore (2015:35) confirmed that knowledge sharing practices among librarians in the university libraries studies is completely low. The author further argued that in order to improve knowledge sharing in university libraries, librarians must possess adequate skills to manipulate technological tools. This study corroborates the finding of Onifade (2015:96) who found that librarians in Nigerian federal university libraries are aware of knowledge sharing but they hardly share knowledge among themselves and Ajegbomogun and Diyaolu (2018) reported that library staff were not willingly sharing their knowledge because people do not appreciate it. . In contrast, Osunade, Philips and Ojo (2007:31) reported that technological skills for collaboration and knowledge sharing through interactive channels like blogs, web sites, audio-conferencing, mailing lists and video-conferencing are still at very infant stage in Nigeria.

Okonedo and Popoola (2012) found that knowledge sharing was not significant on research productivity of librarians. The study also found that the joint effect of knowledge utilisation, self-concept and knowledge sharing were significant on research productivity among librarians in public university in Nigeria. This was in agreement with findings of Akpotu and Jasmine (2013) who found that there was a strong significant relationship amid transformational leadership and knowledge sharing in ICT based among organisations. Durojaye and Tiamiyu (2016:12) in their study on knowledge sharing among professional surveyors in Lagos metropolis affirmed that knowledge sharing attitude as well as level of ICT infrastructure usage predict intention to share

knowledge. Similarly, Olatokun and Elueze (2012:1) found that the reward system was not in correlation with lawyers' attitude towards knowledge sharing. Furthermore, there was a positive intention of lawyers towards knowledge sharing, though the intention to knowledge sharing do not significantly foretell a positive behaviour of lawyers towards knowledge sharing. The extent of IT utilisation was also established to significantly affect lawyer's behaviour towards knowledge sharing.

Extant literature in this section revealed a paucity studies on the effects of ICT on knowledge sharing among librarians (Anna and Puspitasari 2013; Nazim and Mukherjee 20012; Shahid and Alamgir 2011). However, majority of the studies focuses more on organizations, educations and firms (Dhamdhere 2015; Majid and Panchapakesan 2015; Virkus 2012; Hendriks 1999) in developed countries. Furthermore, few studies were recorded in Africa, except in South Africa (Enakrire 2015). The majority of studies conducted in Nigeria centre on knowledge sharing neglecting the effects of ICT skills (Akparobore 2015; Onifade 2015; Muchaonyerwa 2015; Lawal et al. 2014; Okonedo and Popoola 2012) while (Quadri and Abiodun 2017; Durojaye and Tiamiyu 2016; Akpotu and Jasmone 2012; Osunade, Philips and Ojo 2007) centre their studies on electronic resources, professional surveyors, organisations and academia in Nigeria. The majority of the studies used single method approach while only (Anna and Puspitasari 2012) used mixed methods research approach. Hence the present study tried to close this gap by employing mixed methods research and also explaining the theme *"effects of ICT skills on knowledge sharing among librarians in Federal university libraries in South-West Nigeria"* with UTAUT theory through the use of Performance Expectancy (PE) construct (See Chapter Two Table 1).

3.5 Methods of knowledge sharing among librarians

Method as used in this regard is referred to as the channels of transporting information and knowledge from one person to another. Adegboye (2018) found that majority of the employees working in financial organisation of South Africa are not aware of knowledge management and sharing activities and that knowledge sharing tools such as video conferencing, Blogs, LinkedIn, Skype etcetera were not effectively managed. In contrast, Nazim and Mukherjee (2012: para. 5 line 1-3) revealed that the Internet particularly email and Web 2.0 were established to be the mostly used tools for sharing tacit knowledge among employees and users in central university libraries and Indian institute of management. Furthermore, the Internet mostly Web 2.0 intensely transform

the ways users interact, locate, disseminate and share knowledge in the library. In addition, the study also identified knowledge discovery tools, communities of practice, video/audio conferencing, working groups, storytelling as well as data mining tools to manage and practice knowledge sharing.

Similarly, AlRashdi and Srinivas (2015) in a study on assessing knowledge sharing in Sultan Qaboos University (SQU) libraries found that there is readily available infrastructure in SQU libraries to initiate knowledge sharing activities. It was, therefore, indicated in the study that librarians at SQU lack competence in using emerging technology as a technique to share knowledge. This was in line with Nazim and Mukherjee (2012: para. 13 line 4), who reported low utilisation of the ICT tools for knowledge sharing in the Indian Institutes of Management (IIM). Mosha et al. (2015) categorised knowledge sharing mechanisms to include traditional methods such as storytelling and documents, face-to-face discussions, brainstorming, meetings and emerging technological tools (social media) such as Wikis, Blogs, groupware, Google drive, video and audio conferencing, ShareNet, RSS feeds to mention but few. These tools are further described below in detail.

3.5.1 Wikis

Wikis are collaborative and communication web page that allows for and provides ease of use and access, as well as improving ways to share and organise knowledge (Okite-Amughoro 2017:57; Grace 2009:56). Kim and Abbas (2011:213) submitted that wikis enable knowledge sharing, collaboration, group discussion as well as online discussion in the library. Grace (2009:69) posits that researchers can easily share their research outputs by adding it on wikis, this will allow others to read, edit as well as link to relevant additional information. This assertion was supported by Okite-Amughoro (2017:57) who reveal that libraries use wikis in facilitating reflection and personal learning and to support easy knowledge sharing amongst librarians and library clientele. Information professionals particularly knowledge workers can utilize wikis to ease communication; to disseminate information; collaboration and to share knowledge (Grace 2009:69; Okite-Amughoro 2017:57). Razmerita, Kirchner and Sudzina (2009:1029) affirmed that Wikis enable collaborative editing of objects as well as storing of knowledge in a place. Wikis are used in organisation as a means of collaboration.

Coakes (2006:579) established the extent of wikis, blogs and other SMT in KM. Also, the use of technological tools for knowledge sharing symbolise significant potential for libraries and information centres especially in this Information Age. In contrast, Vuori and Okkonen (2012:600) summarised that using SMT for collaboration and sharing knowledge takes too much of time of employee.

3.5.2 Blogs

Chua and Goh (2010:204) viewed a blog as "a hierarchy of text, images and media objects arranged chronologically". Hislop (2013: 217) sees a blog as the core focus for discussion forums amongst knowledge workers. Kim and Abbas (2010:216) affirmed that blogging allows users to partake in knowledge sharing activities to a certain level. Chan et al. (2013:1) study on KM using social media found that users predominantly hold positive impression on using SMT (blogs and facebook) for knowledge sharing and online KM. Facebook emerged as the most facilitating mechanism for knowledge sharing and management among users.

Chu, Kwan and Warning (2012) found that university undergraduate students have established that blogs are useful particularly in assisting them to manage and share knowledge acquired from their professional experiences. In supporting this finding, Chuang and Shen (2008:65) submitted that elementary school students achieved better learning performance and satisfaction through blog knowledge sharing than those in other settings.

3.5.3 Social Networking Sites (SNS)

Social Networking Sites (SNS) are regarded as sites that contain social media tools like MySpace and Facebook which are used in facilitating communication, chat and sharing of knowledge among people (Mosha et al. 2015). Mahmood and Richardson (2011:365) reported that SNS such as Facebook, Flickr, MySpace, Twitter are used by librarians in academic libraries for sharing general information and marketing libraries. Akeriwa, Penzhorn and Holmner (2014:285) posit that social bookmarking can be used to link librarians to free bookmarking sites online and presents several opportunities for networking with other professionals or scholars with similar interests so as to share knowledge easily. Chu and Du (2013) examined social networking tools among academic libraries in English-speaking countries and found that Twitter and Facebook emerged as the most popularly used tools for knowledge sharing with respondent rate of 62.9%. Mahmood and

Richardson (2011:369) assert that Twitter allows librarians to share their idea and knowledge instantly with everybody on its network in as much the entries are more than 140 characters or less. Akeriwa et al. (2014:286) postulate that subject librarians in Ghana can also use professional SNS such as LinkedIn, Research gate, and Academia.edu for sharing their research output and professional networking and communication with library users.

Bakare, Chiemenem, Bamigboye and Okonedo (2015:43) found that academic staff 16%, postgraduate 21% and undergraduate students 24% used SNS like Facebook and Twitter as a medium for sharing knowledge at University of Agriculture, Abeokuta Nigeria. This was in agreement with the finding of Quadri and Idowu's findings (2016:38) who found that librarians in Southwest Nigeria have preference for Twitter, Facebook and Google+ for selective dissemination of information (SDI). In complimenting this finding, Balubaid (2013:406) reported that 70% of the engineering students at King Abdulaziz University, Saudi Arabia chose Facebook as the best mechanism for sharing knowledge and information between them and the department, 16% of the students chose Twitter, 13% went for Google+, while the least of them chose others 1%. Anbari (2010) found that performance of internal networks for satisfying the user's needs, encouraging and motivating them to partake in knowledge sharing, attracting trust and confidence of users as well as effectiveness in enhancing levels of specialized knowledge were average.

3.5.4 RSS feeds

Rich Site Summary (RSS) feeds are summary of stored data or information sources that are accessed through a dedicated universal resource locator (URL) (Kim and Abbas 2010:214). It is an emerging tool used for obtaining information regularly from news services, blogs as well as regular content from library databases (Akeriwa et al. 2014:285). Academic librarians commonly used RSS to disseminate and share library news and exhibitions, library orientation, reference (Chua and Goh 2010; Mahmood and Richardson 2011; Okite-Amughoro 2017). Tripathi and Kumar (2010:201) found that academic libraries in Canada use RSS for sharing information like general news of the library 62.2%, while Australia and UK academic libraries use it for library news and event 28.8% respectively. RSS feeds is an excellent social media tool for the attainment and dissemination of information on a regular basis and has been widely employed by academic libraries to disseminate information like library events announcement, library news and current alerts, exhibition of new library acquisitions and to improve reference services (Harinarayana and

Raju 2010:69). Nguyen (2008) affirmed that amongst web 2.0 technologies used by Australian university libraries, the RSS remain the mostly used and applied technology to share information in the libraries.

3.5.5 Social Tagging

Social bookmarking is described as the process of saving bookmarks site to a public domain site as well as tagging them with keywords, while bookmarking is the practice of saving the web address that an individual wish to visit at a later date or in the nearest future on their personal computer (Okite-Amughoro 2017:64). Social tagging is an essential social media tool to facilitate and enhance knowledge sharing in university libraries (Mosha et al. 2015). Social tagging is used to bookmark useful site by the users particularly in the digital libraries (Kwanya 2017). Kim and Abbas (2012:13) submitted that social tagging provides a means to organise library information resources as well as storing the selected articles under the chosen category.

Okite-Amughoro (2017) posited that social bookmarking is online based system that allows individual to tag their chosen web content and store in a place before sharing with other colleagues. In supporting this statement, Click and Petit (2010) opined that social bookmarks can be privately saved and shared with colleagues. Gray et al. (2008: 113) confirmed that social bookmarking sites are essential to support knowledge sharing practices within higher education of learning. Akeriwa et al. (2014:3) affirmed that social bookmarking assist by linking academics to free online bookmarking sites as well as providing opportunities for networking with other academics who have similar interests to share knowledge easily.

3.5.6 Video and audio sharing

Audio and video sharing like YouTube and Podcasts comprised of audio and video contents that are available on internet which can be delivered automatically to a personal computer (PC) or media player (Harinarayana and Raju 2010:75; Kim and Abbas, 2010:214). Mahmood and Richardson (2011:371) postulated that YouTube enhances and improves knowledge sharing especially when conducting interviews as well as uploading speeches. Mosha et al. (2015) echoed that podcasts can be kept within academic libraries in order to support library clientele to share knowledge by listening to lectures, debates and several conversations.

Fari and Ocholla (2015:41) revealed that academics in Nigeria and South Africa used computers, data storage devices, mobile phones as well as the internet facilities for knowledge sharing. The study also indicated that the use of outdated and emerging technologies varied from the countries with South African academics utilising more emerging technologies such as video conferencing, audio conferencing, wikis, Google drive and so on technologies for knowledge sharing. This assertion was corroborated with that of Ugwu and Ekere (2019) who revealed that most of the respondents 67% share knowledge through Internet/local network, 64% used email while 65% used library dedicated website and 58% used mobile devices respectively.

Stafford and Mearns (2009: para. 1 line 8-9) indicated that web based social networking tools were found to be effective and efficient for the employees. Therefore, library management should motivate their personnel in using the tools for both knowledge creation and sharing. Mosha (2014:13) found that the use of SMTs to enhance knowledge sharing is still at infant stage among knowledge workers in Tanzanian higher institutions of learning. It was reported by Mosha (2014) that face-to-face, Google mail, and Google drive were the major mechanisms used to enhance knowledge sharing activities in the higher institutions. The findings also noted that knowledge workers at this institution in Tanzania only share knowledge when need arises and the knowledge shared is to facilitate research, creativity and innovation as well as teaching and learning activities. The above finding was in line with that of Nengomasha, Mubuyaeta and Beukes-Amiss (20017:18) who found that organisational knowledge dissemination and knowledge transfer activities indicated a strong preference for the utilisation of fax machines, telephones as well as face-to-face meetings as methods of dispensing and transferring organisational knowledge among MGECW in Namibia.

Chisenga and Chande-Mallya (2012) reported in a study on SMTs in African countries libraries and revealed that 78% of the librarians in the zone used SMTs for knowledge sharing. The authors also established that librarians in South Africa have the highest usage level of SMTs for knowledge sharing with 83%, seconded by Kenya with 39% and Zambia 30% respectively. Furthermore, the least usage of SMTs were Namibia, Sudan and Uganda with 14% and Malawi with 12%. In contrast, Kwanya, Stillwell and Underwood (2012:156) lamented that no particular school library in Nairobi, Kenya was using SMTs for sharing knowledge. The authors also found that private university libraries displayed a high utilisation rate of SMTs for knowledge sharing than the public university libraries.

Osunade, Philips and Ojo (2007:31) posited that the utilisation of the Internet for collaboration and knowledge sharing via interactive services like blogs, web sites, wikis, mailing lists, audio and video conferencing are still very limited in Nigeria. Awodoyin, Osisanwo, Adetoro and Adeyemo (2016:12) submitted that librarians in Nigerian tertiary institutions are still sharing knowledge primarily through traditional medium such as face-to-face interaction, newsletters, memo, bulletin boards and discussion boards. In corroborating the above finding, Onifade (2015:91) reported that librarians in Nigerian federal university libraries had positive perception regarding knowledge sharing, yet they averagely share knowledge. Furthermore, it was also found in the study that majority of the participants 38.6% shared knowledge through verbal discussion, 24.9% shared knowledge during staff meeting while the least participants 2.8% shared knowledge via community of practice. This was in agreement with a recent study by Ugwu and Ekere (2019) who found that majority of the respondents 72% used library displays and notices for knowledge sharing while 76% used oral communication. Abbas (2017:12) revealed that knowledge is shared traditionally amongst academics in the universities studied through workshops, seminars and conferences as well as membership of professional bodies. This result was in agreement with that of Opeke and Opele (2014:102) who found that 55.6% of the postgraduate students' in selected Nigerian universities preferred to share knowledge through face-to-face to other medium.

It is evident from the above extant literature that librarians in countries like Australia, Canada, United Kingdom and United States of America shared their knowledge through emerging technology tools like Facebook, Twitter, SNS, Wikis, Skype, Podcasts, Social bookmarking and RSS (Chua and Goh 2010; Tripathi and Kumar 2010; Mahmood and Richardson 2011; Chu and Du 2013). Furthermore, librarians in Africa countries do not enjoy emerging technology tools for knowledge sharing except in Ghana and South Africa (Chisenga and Chande-Mallya 2012; Akeriwa et al. 2014; Fari and Ocholla 2015). However, there is paucity of emerging technology tools for knowledge sharing among librarians in Nigeria. Even though, some studies show that librarians in Nigerian university libraries share knowledge through the traditional ways (Opeke and Opele 2014; Onifade 2015; Awodoyin et al. 2016; Abbas 2017). Furthermore, a study by Quadri and Idowu (2016) revealed that emerging technology tools such as Facebook, Twitter and Google+ are used in libraries for selective dissemination of information (SDI) to library users. The majority of the studies used a single method approach while AlRashdi and Srinivas (2015), Chan et al. (2013) used mixed methods. Hence, in filling the lacuna, the present study used UTAUT

theory particularly Performance Expectancy (PE) and Effort Expectancy (EE) constructs to explain the theme (See Chapter 2, Table 1).

3.6. Level of knowledge sharing among librarians

The extent/level of knowledge sharing in university libraries will go a long way in determining librarian's degree of generating, creating and sharing knowledge among themselves to foster team work and job productivity. Rafique and Mahmood (2018:296) noted that both knowledge sharing and job satisfaction are essential in achieving organisational objectives particularly at grassroot level. Helmy, Adawiyah and Banani (2019) noted that knowledge sharing practices was discovered to moderately influence employee productivity in Yogyakarta, Indonesia. In line with the above findings, Mahdi, Nassar and Almsafir (2019) revealed in their study that knowledge management processes which include knowledge generating, storing and sharing was found to be significant among academic leaders in private universities in Iraq.

Rafique and Mahmood (2018:295) found that both knowledge sharing and job satisfaction have positive relationship and that they both influenced one another. Also, it was revealed from the study that knowledge sharing has impacted positively on employee job satisfaction. It was also reported that employee job satisfaction has a strong impact on knowledge sharing. Kess, Torkko and Phusavat (2007:72) established that the most commonly and effective ways of knowledge sharing appears to be through meetings. However, meetings could be held in various levels such as weekly and monthly. The study further lamented that to facilitate information and knowledge transfer in organisations, communication through phone or email among employees must be done on daily basis. The finding was in tandem with that of Admin (2017) who submitted that for effective knowledge sharing in any organisations, face-to-face collaboration and meeting time as well as a place should be set aside for creating and generating new knowledge particularly on a weekly basis or bi-monthly basis.

Mesrinejad (2011) indicated that academic staff are aware of web 2.0 tools and embrace podcasts, all the tools are used to satisfactory and acceptable level. Onifade (2015:95) submitted that librarians in Nigerian university libraries averagely share knowledge particularly on matters like readers' services and most importantly library issues, while they moderately share knowledge on other things like serial usage a well as library automation among themselves. Furthermore, the

author reported that the level of knowledge sharing among the respondents was low. Lawal et al. (2014:28 and 29) reported that the majority of the academic staff share resources on daily basis 35.95%, while 33.33% confirmed that they shared resources on monthly basis. Furthermore, a majority of the academic staff affirmed that resources were shared on daily basis particularly with the students 48%.

The limited studies reviewed tends towards business sector (Kess et al. 2007; Admin 2017 and Helmy, Adawiyah and Banani 2019), and only one study was found to focus on knowledge sharing among faculty members in Nigeria (Lawal et al. 2014). However, a study by Onifade (2015) dwelt on librarians' knowledge sharing in Nigeria university libraries. The studies that focus on this theme employed single method of data collection (qualitative or quantitative). Kess et al. (2007) adopted observation and interviews, while Onifade (2015) used quantitative method. Therefore, to elaborate on this theme *"level of knowledge sharing among librarians in Federal university libraries in South-West Nigeria"*, the present study utilized Social Influence (SI) and Effort Expectancy (EE) constructs of UTAUT to describe the theme (See Table 1 in Chapter Two).

3.7. Factors affecting knowledge sharing among librarians

Factors are regarded as elements that bring about certain result of cause to a particular phenomenon (Robson et al. 2016). Islam and Khan (2014) reported that the following were the factors affecting knowledge sharing activities among librarians in Dhaka University Library: individual/human factors (Behavioural pattern, mutual relationship, cooperative efforts and reliability of the individual); organizational factors (qualified professionals, staff motivation); and technological factors (digital institutional repository, access to online journals). This finding corroborated the result of Koloniari, Vraimaki and Fassoulis (2016:11) who found organisational culture to be the principal factor affecting knowledge sharing among librarians in Greek academic libraries, as it was established to have a strong positive effect on them. Biranvand, Seif and Khasseh (2015) reported that trust is the major factor that inhibits knowledge sharing amongst librarians in Iranian public libraries.

Cheng et al. (2009:313) broadly classified obstacles to knowledge sharing amongst faculty members in Malaysia to be technological, individual and as well as organisational. On one hand, Kim and Ju (2008:282) identified factors such as perception, collaboration, trust, reward system

as well as channels of communication to knowledge sharing amongst academics in tertiary institutions. Ipe (2003:343) postulates that organisational culture, nature of knowledge, opportunities and motivation to share were recorded as the factors inhibiting knowledge sharing. In contrast, Majid and Panchapakesan (2015:30) reported that the main obstacles to knowledge sharing amongst undergraduate students in India were lack of a sharing culture and time as well as poor depth of human relation.

Many scholars (Fan, Zhang and Yen 2014; Nooshinfard and Nemati-Anaraki 2014) have categorised factors affecting knowledge sharing to include: lack of available resources, lack of top level leadership, individual and organisational resistance to change, and organisational structure. Karagoz, Korthaus and Augar (2014) and Crowther (2014) identified goal problems, inadequate funding, project schedule barriers, communication factor, lack of trust, confidentiality and respect amongst organisations, absence of measurement and evaluation, and absence of sharing guidelines as the factors militating to knowledge sharing. This assertion was in tandem with Olatokun and Elueze (2012:1) who reported that incentives, management support, motivation, relationships, and structure among others were seen as factors influencing individual's readiness to share knowledge.

Many studies have categorised factors affecting knowledge sharing behaviour into three groups, namely, individual/personal, organisational as well as technological (Connelly and Kelloway 2003; Lin 2007; Paroutis and Al Saleh 2009; Tohidinia and Mosakhani 2010; Usman and Oyefolahan 2014). Lin (2007:317) identified the three groups of the factors to be:

i. Individual factors
ii. Organisational factors
iii. Technological factors

3.7.1 Individual/Personal factor

Individual factor is described as people who generate and share knowledge (tacit and explicit) in an organisation (Maiga 2017:30). Tohidinia and Mosakhani (2010:623) found that individual factors had a high impact on knowledge collection and donation. Thus, if managers incline to involve their employees in knowledge sharing activities, individual factors must be investigated. Lin (2007:623) affirmed that enjoyment in assisting others and efficiency of knowledge were strongly connected with individual readiness to share knowledge. However, individual who feel

happy in sharing his/her knowledge and assisting others is likely to be motivated both to collect and disseminate knowledge to others. In corroborating the above finding, Kumaresan and Swrooprani (2013:7) found that a majority of the respondents (93%) perceived that sharing their personal knowledge will enhance their job productivity, while knowledge sharing will assist in strategic planning of the library in Qatar community. Parirokh, Daneshgar and Fattahi (2008:117) affirmed that for effective knowledge sharing, factors related to personal interest and enthusiasm of librarians should be considered.

Fullwood and Rowley (2017) reported in a study on factors affecting knowledge sharing amongst UK academics and found that individual beliefs among academics were more significant on their knowledge sharing attitudes than the organisational culture. In addition, leadership was noted as the most significant factor within the overall organisational culture with autonomy established the weakest relationship. Furthermore, belief in the possibility of rewards system through associations was established to have a high influence on individuals. The above findings were in agreement with that of Oladipupo and AbdulRahman (2018) who reported that attitude, subjective norms and behavioural control significantly influenced intention to share knowledge among non-academic staff in the University of Ibadan, Nigeria.

Okye-Kwakwe and Nor (2011:66) posit that individuals are still reluctant or unwilling to participate in knowledge management processes particularly knowledge sharing. The authors also affirmed that if individuals are assured that dealing with others will not have any implication, building trust with one another will be encouraged. However, the choice to share knowledge may be influenced by an individual's personal beliefs on knowledge sharing (Okye-Kwakwe and Nor 2011:69). In the same vein, Nonaka and Tekeuchi (1995) submitted that organisations would not thrive in creating knowledge without individuals, since individuals are regarded as being crucial elements in knowledge management. In a similar study by Ndlela and Toit (2001), the authors maintained that individuals are considered as the heart of organisational knowledge creation and utilisation. It is therefore important to manage individuals who are willing to generate and share knowledge in a particular organisation (Lee and Choi 2003:188).

Ikhsan, Sharifuddin and Rowland (2004) found that a successful knowledge creation and transfer relies heavily on a culture that supports knowledge sharing and trust amongst individuals in the organisation. Furthermore, knowledge transfer entails the willingness of an individual to work with one another and share knowledge to their mutual benefit. Hence, it is nearly impossible to convey knowledge to one another without sharing. Similarly, Ismail and Yusof (2010:1,9) reported that there is a correlation between individual factors (awareness, trust and personality) and the quality of knowledge shared. Furthermore, the result showed that personality received the highest significant predictor to quality of knowledge shared followed by trust and awareness (Ismail and Yusof 2010). The above findings were in agreement with that of Ouakouak and Ouedraogo (2019:757) who found in their study on fostering knowledge sharing that professional trust as well as effective commitment have positive impact on knowledge sharing and usage.

Ugwu and Ekere (2019) reported that only education as well as work experience were found to significantly correlate with knowledge management practices of librarians in Nigeria federal university libraries. The above findings were in agreement with that of Syed-Ikhsan and Rowland (2004) who found that year of experience and educational qualification were found to be remarkable variables influencing knowledge management practices. Also, Kasim (2015) reported that gender had positive effects to knowledge sharing behaviour among private sector in Malaysia. In contrast, Ajiferuke (2003) discovered that gender, age and educational qualification as personal characteristics did not show any significant relationship with regards to knowledge management programs (that is, knowledge identification, knowledge acquisition, knowledge creation, knowledge dissemination and knowledge sharing). The study corroborates the findings of Ezeani et al. (2008) cited in Ugwu and Ekere (2019:360) who reported that experience and educational qualification were not important characteristics influencing knowledge management practices in South-Eastern libraries in Nigeria. In addition, Kasim (2015) affirmed that age and work experience as personal factors indicated insignificant in virtual knowledge sharing amongst private sector employee in Malaysia.

Organizations must establish suitable culture that supports and encourages people to generate and share knowledge within the organisation (Holsapple and Joshi 2001). However, Lee and Choi (2003:183) affirmed that when organisational relationships are encouraged via care, knowledge can be generated and shared. Connelly and Kelloway (2003:294) found in their study that social conversation, organisational support as well as communication culture were predictors to a

perceived knowledge sharing culture. For effective knowledge sharing, an individual must be involved and willing to share knowledge. However, willingness to share indicates an enthusiastic attitude of an individual in knowledge sharing. In other words, if an individual is not willing to share, knowledge sharing activities will be hindered (Maiga 2017:31). Therefore, for the present study, by individuals, this is in reference to the professional librarians who create, use and share knowledge in university libraries.

3.7.2 Organisational factor

Organisational factor encompasses management support to create an environment that supports, provides, enhances, encourages and promotes adequate resources to foster knowledge sharing in an organisation particularly in the university libraries (Maiga 2017:29). Tohidinia and Mosakhani (2010:621) reveal that among all the factors considered to influence knowledge sharing, organisational rewards did not indicate a significant connection with attitude toward knowledge sharing. However, since knowledge sharing is seen as a delicate behaviour, a successful reward must be heartening which will be goal oriented. Management/organisational support is seen as a significant variable in the knowledge sharing model that correlate individual, organisation culture and structure, mentoring, reward systems and policies made on knowledge sharing (Maiga 2017:29). This assertion was in agreement with that of Noor and Salim (2011:107) who found that organisational support assisted in policy formulation and developing culture to sustain knowledge sharing activities as well as innovation in an organisation. Dokhtesmati and Bousari (2013:385) affirmed that unsuitable organisational structure, culture and lack of incentives systems hinder knowledge sharing. Though there is a high correlation between team work and knowledge sharing, Parirokh, Daneshgar and Fattahi (2008:116) revealed that lack of comprehensive organisational policies and procedures hampered knowledge sharing process among librarians who are member of the Reference and User Services Association (RUSA) Electronic Discussion Group.

Nengomasha, Mubuyaeta and Beukes-Amiss (20017:18) reported that management of organisational knowledge was informally practiced without knowledge management structures and structural procedures in place to encourage employees to share their organisational knowledge. The authors also affirmed that to facilitate and enable organisational knowledge management in the MGECW, the following have to be considered:

i. Positive leadership (top management level);
ii. Technology (improved ICT infrastructure);
iii. Organisational structure and culture;
iv. Trust;
v. Employee commitment;
vi. Social networking; and
vii. Teamwork (Nengomasha, Mubuyaeta and Beukes-Amiss 2017:18).

Maiga (2017:30) submitted that both organisational rewards and incentives motivate knowledge sharing among professional librarians. This reward system might be in monetary or non-monetary terms which influence librarians to share knowledge with colleagues in the library. The above finding was in line with that by Aharony (2011:120) who studied two groups of librarians in Israel (academic and public librarians) and found that reward system is significant in the context of knowledge sharing and management. Furthermore, Aharony (2011:120) noted that:

> the more librarians feel that they receive rewards, the more they trust the organization, the more they are ready to collaborate. In addition, the larger the rewards the librarians receive, the more positive attitude they have toward knowledge management.

Jennex and Olfman (2001) and Malhotra and Galletta (2003) noted then that there is a positive impact of incentives on sharing. Mathew and Rodrigues (2015) further noted that knowledge management incentives have a strong positive impact on knowledge sharing. Information professionals should provide valuable insights for implementing knowledge management initiatives to encourage knowledge sharing (Lyu and Zhang 2017)

In the context of Africa, Harker (2015) revealed that social, process and technological factors continue to permeate knowledge sharing in the higher education context. However, the process factor was found to be significant followed by human and technology factors among academic staff at a selected university of technology in South Africa. Nevertheless, the organisational culture and management support appeared as the most significant human factors. In the same vein, Twum-Darko and Harker (2015) argued that the factors constituting the problem of knowledge sharing

were identified to be the lack of accessible knowledge, absence of staff effectiveness and efficiency and a lack of social unity. However, the lack of accessibility to knowledge was reported to be triggered by an absence of available knowledge resources as well as systematic approach to knowledge sharing among academics in South Africa (Twum-Darko and Harker 2015).

Similarly, Mannie, Van Niekerk and Adendorff (2013:7) averred that organisational culture and learning organisation factors have a significant influence on effective knowledge management. Consequently, latent social factors such as collaboration and trust were acknowledged as factors that need to be tackled for effective knowledge sharing activities. Muchaonyerwa (2015) found that knowledge acquired, generated and created was not subsequently shared in the university libraries. More so, both organisational culture and structure were not favourable for knowledge sharing. In addition, the study indicated that organisational structure in university libraries is protocol based, hence, resulting in unfavourable knowledge sharing. In contrast, Yeşil and Hirlak (2019:99) revealed that organisational related barrier of knowledge sharing was found to negatively affects knowledge sharing practices among academic's staff higher institution in Turkey.

Elwany and Mahrous (2016:115) established that there is existing relationship amongst KM enablers like organisational culture and structure and IT support. The study also recorded a partial mediating effect among IT support and organisational structure on one side and knowledge management success on the other side. The above finding was in contrary with finding by Nengomasha, Mubuyaeta and Beukes-Amiss (2017:18) who indicated lack of ICT skills and technical support, poor ICT infrastructure, lack of employee motivation and incentives, negative attitude of employees towards organisational KM practices, lack of proper record management, lack of time and funds as well as inadequate infrastructure as barriers to knowledge management practices in Namibia.

Ogunsola and Lasode (2017) found that knowledge recovery, synergy and reciprocity are the main factors motivating knowledge sharing amongst the architects. More so, the authors identified distrust, superiority complex, reluctance to learn, over-criticism, mediocrity, disloyalty, and abuse of knowledge as the factors hindering knowledge sharing. Ugwu (2016) reported that the success of KM implementation in the university libraries relied heavily on certain organisational factors which include top management leadership support, human resources policy, compensation system

and collaboration. However, a strong correlation was found between the factors and organisational culture and structure.

Lawal et al. (2014:25) in a study on knowledge sharing among academic staff in Nigerian universities identified the major limitations to knowledge sharing as inadequate awareness of knowledge sharing activities among academic community as well as poor attitude among academic staff to share knowledge with one another. Abdur-Rafiu and Opesade (2015) found that academics at the polytechnic will be willing to share work related knowledge provided if the factors affecting knowledge sharing are adequately addressed. In addition, perceived behavioural control coupled with academic commitment was found to be significant in predicting the intention to share knowledge, whereas trust, attitude and subjective norms are not significant. Furthermore, academics' intention to share their knowledge is predicted by their behaviour to knowledge sharing. In contrast, Olatokun and Nwafor (2012:216) discovered that attitude does not have significant influence on employee intentions to share knowledge in the organisation.

3.7.3 Technological factors

Technology has the capability to offer quick access to large volumes of data that will enable distance collaboration and sharing that facilitates teamwork in organisations and businesses (Riege 2005:29). The author further reiterated that there is little uncertainty that technology can act as an enabler in supporting knowledge sharing activities, and thereby making it easier, faster and more effective. However, to do this, there should be appropriate implementation and suitable technology that will fit both the people and the organisation. Lee and Choi (2003:188) posited that IT is widely used to connect people with organised knowledge so as to facilitate conversations and to generate new knowledge. Becerra-Fernandes and Sabherwal (2010) submit that well established IT infrastructure assists to facilitate knowledge sharing activities by connecting information communication structures like processing of data, storage and communication systems. In line with the above findings, Lee (2018) avowed that IT support as well as social interaction ties were found to positively connected with knowledge sharing practices, and that social identification, trust and the use of smart devices had positive connection with knowledge sharing.

IT is broadly used to connect people or an individual with recyclable codified knowledge that will facilitate interactions as well as to create new knowledge. Thus, IT support is crucial for initiating and transferring knowledge management (Lee and Choi 2003:188). Noor and Salim (2011:110) echoed that availability of sophisticated IT coupled with computer network will facilitate knowledge sharing among employees in a workplace. Dokhtesmati and Bousari (2013:385) found a correlation between IT and knowledge sharing in research. The authors also submitted that traditional tool like face-to-face is recorded as the most practical mechanism for knowledge sharing, the reason being that lack of IT instruction as well as unfamiliarity with IT were the purpose of using face-to-face. Kim and Lee (2004:284) established that knowledge management systems, web technologies and IT infrastructures were used for electronic services. In addition, the finding also indicated that knowledge sharing capability has affected employee's use and application of information system. The study also found another significant element of IT associated with knowledge sharing which is the level of end-user's centre of information system development.

Similarly, Azuh and Modebelu (2013:82) indicated a low level of use of ICT tools to promote and share knowledge among academic staff in agricultural education in the South-East geo-political zone of Nigeria. The study further revealed that academic staff in agricultural education in Nigerian universities are faced with some numerous challenges in terms of sharing knowledge via technology with each other. In addition, the study shows that this low-level usage of ICT infrastructure affects knowledge sharing among academic staff in agricultural education. Other impediments are inadequate time for training in ICT, technical support, age, erratic power supply, poor internet connectivity and lack of ICT skills. However, if this trend continues, librarians and other information professionals like archivist and knowledge managers in Nigeria might find it difficult to share knowledge effectively with each other using the ICT (Azuh and Modebelu 2013).

The literature review in this section revealed that many studies have found individual/personal factors, organisational factors and technological factors hindering knowledge sharing in organisations, firms, companies, businesses and institutions. Quite a number of studies on librarians' knowledge sharing behaviour are many in countries outside Africa (Parirokh et al. 2008; Aharony 2011; Kumaresan and Swrooprani 2013; Islam and Khan 2014; Biranvand et al. 2016; Koloniari et al. 2016), while few studies were recorded in Africa (Nguyo et al.2015; Muchaonyerwa 2015; Maiga 2017), and in Nigeria (Lawal et al. 2014 and Ugwu 2016). Majority

of the studies used single method approach (questionnaire or interview), while few studies (Harker 2015; Muchaonyerwa 2015; Maiga 2017; Nengomasha, Mubuyaeta and Beukes-Amiss 2017) employed mixed methods. Therefore, the present study used two constructs (Social influence and Facilitating condition) from UTAUT to explain "Factors affecting knowledge sharing among librarians in Federal university libraries in South-West Nigeria" (See Chapter Two Table 1).

In summary, the factors of knowledge sharing were later categorised by Kim and Lee (2004:284); Riege (2005:23, 26 and 29); Johanna (2010:34); Okyere-Kwakye and Nor (2011:67). Below is the tabulated categorisation:

Table 3.1: Categorisation of Knowledge Sharing Factors

Factors	Categorisation
Personal/Individual factors	Trust, self-efficacy, cost, altruism, personality, mutual reciprocity, job satisfaction, awareness, time, level of experience, lack of interpersonal skills, poor verbal/written communication, level of education, lack of social network, gender differences, age differences, centralization, formalisation.
Organisational/Management factors	Managerial implication and organisation culture/structure, reward system, policies, mentoring, inclusion of knowledge sharing as part of work process, integration of KM strategy and sharing initiatives, lack of managerial direction in relation to clearly communicating, lack of space to share and create new knowledge, inadequate infrastructure to support sharing activities, knowledge retention of highly skilled staff is not a high priority, external competitiveness within business units, hierarchical organisation structure inhibits sharing practices, communication and knowledge flows are restricted into certain directions
Technological factors	Availability of IT infrastructure, know-how, experience and skill with technology, the internet and intranet, IT tools, communication channel and technology support, lack of IT integration and compatibility, unrealistic IT expectations, unfamiliarity with IT, inappropriate training with regards to emerging IT.

3.8. Summary

The literature review in this section was arranged according to the themes obtained from the research questions. The themes were reviewed globally down to Africa and narrowed down to Nigeria. These themes include level of ICT skills among librarians in Federal university libraries; effects of ICT on knowledge sharing among librarians in Federal university libraries; methods of

knowledge sharing among librarians in the Federal university libraries; level of knowledge sharing among librarians in the Federal university libraries; factors affecting knowledge sharing among librarians in Federal university libraries. The construct in UTAUT theory was related to each theme for in-depth understanding of the study.

It was observed from the literature reviewed that there is a paucity of empirical literature on knowledge sharing and ICT infrastructure and skills among librarians in South-west Nigeria. One of the related few studies was Anasi, Akpan and Adedokun (2014) which investigated ICT and knowledge sharing among academic librarians in Southwest Nigeria. This study did not explore the core ICT skills of librarians required for effective knowledge sharing. This present study, therefore, tried to fill the gap in the literature. The methodology adopted for this study will be explained in Chapter Four.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

Methodology refers to “various ways of obtaining, organising as well as analysing data” (Polit and Hungler 1999:232). The authors further noted that methodology decisions rely majorly on the nature of the research question. Research methods refer to the various procedures, systems, algorithms, and approaches utilized in research process. The aforementioned techniques are employed by an investigator in the process of a study and are referred to as research methods (Rajasekar, Philominathan and Chinnathanbi 2006:5). The research methods are fundamentally planned, scientific in nature as well as value-neutral. They comprise experimental studies; theoretical procedures; numerical schemes; and statistical approaches. One importance of research method is that it helps researchers to collect data/samples as well as finding an answer to a problem (Rajasekar, Philominathan and Chinnathanbi 2006:5).

According to Rajasekar, Philominathan, and Chinnathanbi (2006), research methodology is a methodical approach of solving a particular problem. It is also a scientific way of studying how research should be carried out. Research methodology can also be defined as the study of methods by which one can gain knowledge (Rajasekar, Philominathan, and Chinnathanbi 2006). It might be comprehended as a science of inquiring the conduct of research scientifically. It can also be regarded as paradigms which provide the epistemological and ontological stance of a study (Chior 2009). May (1997) equated research methodology to paradigms while Creswell (2014) referred to research methodology as world views. Myers (2009:284) perceived the research method as a “strategy of inquiry, which moves from the underlying assumptions to research design and data collection". Research methodology is extremely basic to the whole research process and it is in research method that the researcher stamps his/her scientific status on the process (Onodugo, Ugwuonah and Ebinne 2010:65). Research methodology is the symmetric process or methodology intended for producing, gathering and in addition examining the information required for taking care of a predefined problem (Iyiogwe 2002:108).

The purpose of this study was to examine the technological skills on knowledge sharing among librarians in Nigeria.The study aimed to address five specific research questions (see section 1.2.2). Ngulube (2019:86) correctly noted that any research aimed at exploring and understanding KM dynamics should therefore be based on robust and thorough research procedures. This chapter therefore describes the research paradigm, methodology and procedures applied to get the answers for the research questions. How the research instruments were developed and used to collect the data required for this particular study will also be explained. The chapter also explains how the data analysis procedure/s was carried out to determine the findings. The chapter also reviews the ethical considerations that guided the study and concludes by evaluating the research methodology.

4.2. Research paradigm

Terre Blanche and Durrheim (2006) noted that research process is divided into three main dimensions namely: ontology, methodology as well as epistemology. The authors also stressed that a research paradigm encompasses all the systems of interconnected practice as well as thinking that describe the nature of the inquiry alongside with the three dimensions (Ontology, Methodology and Epistemology).

The phrase “Paradigm” initiated from the Greek word “Paradeigma” which means pattern. Thomas Kuhn 1962 was the first person to use the phrase to signify a conceptual framework among the community of scientists for investigating problems as well as finding solutions. Kuhn (1977) describe paradigm as a research culture that is concentrated on a set of values, assumptions, and beliefs that a group of researchers has in communal regarding the research nature and conduct. Hence, paradigm implies a system, structure, pattern, and structure of values, scientific ideas, and assumptions (Olsen, Lodwick and Dunlop 1992:16). Creswell (2009:6) described “research paradigm as the general orientation about the world and the nature of research that a researcher holds." Blakie (2010) sees the research paradigm as the assumptions made about the social reality as well as the way in which people can realize and know this reality. Pickard (2013:10) affirmed that there are three major categories of research paradigms employed in social science research, these are Interpretivism, Positivism, and Post-positivism.

4.2.1. Interpretivism

This holds the assumptions that an individual seeks to recognise and comprehend the planet in which they subsist and work. "Interpretivism frequently focuses on the precise contexts that people live in order to comprehend the cultural and historical settings of the participants involved in a particular study" (Creswell 2009:8). Interpretivism is further defined as the philosophical situation in which people bring meaning to a position, and understand their world, behaviour, and influence through the use of these meanings (Punch 2013). Szyjka (2012:112) stressed that interpretivism generally reflects the values, experiences as well as biases of the researcher. Interpretivism allows for investigators to view the world through perceptions, values as well as experiences of the respondents (Thanh and Thanh 2015). This paradigm (interpretivism) utilizes those values and experiences for constructing and interpreting the investigator's understanding from collected data (Thanh and Thanh 2015:24). Blaike (2007) postulated that interpretivism dismisses the procedures of the natural sciences and posits that social phenomena require a comprehensive knowledge of the social world in which people have created and reproduced through their activities. Willis (1995) stress that interpretivism is anti-foundationalists, which means that there is no single right strategy to information.

Walsham (1995) indicated that there are no right or wrong models in the interpretivism paradigm. Instead, judgement should be done according to how 'interesting' the researcher views them (correct or incorrect models). Thanh and Thanh (2015) further echoed that researcher who are interested in interpretive paradigm should avoid rigidity to answers in their studies. Reeves and Hedberg (2003:32) stressed that "interpretivism paradigm emphasises on the need to put analysis in context". According to Thanh and Thanh (2015:25):

> Interpretivism paradigm is not a dominant model of research, it is gaining considerable influence, because it can accommodate multiple perspectives and versions of truths.

The interpretivism paradigm allows for deep understanding of a particular concept as well as exploring the understanding of the world in which they live (Rahi 2017:1). The author further referred to the interpretivism research paradigm as social constructivism, constructivism, as well

as qualitative research. This paradigm affirms that true knowledge can be acquired through interpretation of the subject (Rahi 2017).

4.2.2. Positivism

Positivism employs scientific methods and language to examine and document human experiences. The importance of positivism is an experimental result which lends itself to statistical analysis. The primary goal of positivist researchers is to "make time and context-free generalizations" (Carson et al. 2001:3). On the other hand, post-positivism is the philosophical idea after positivism which challenges the customary conviction of the total truth of knowledge (Phillips and Burbules 2000). Gephart (1999:455) noted that:

> positivism emphasises on quantitative and experimental research methods that have been supplemented to some degree of interest in the use of qualitative methods to collect broader and relevant information outside the variables measured.

Positivist research helps in controlling and structuring research procedure by identifying a suitable and clear research topic as well as forming appropriate research hypotheses and by adopting appropriate research methodology (Churchill 1996). “Positivist paradigm refers to the researcher’s attempts to explain the phenomena they study in the most economic possible way” (Kivunja and Kuyini 2017:30). The authors emphasised that the purpose of positivism paradigm is to provide clarifications as well as to make predictions that are based on measurable outcomes. Carson et al. (2001) submitted that positivist affirms the distinction between science, experience and fact and value judgement. The authors also stressed that it is relevant and crucial in positivist research to acquire and gain objectivity and use dependably logical and rational procedures to research. Positivist research is central to statistical and mathematical techniques that adhere to generally structured research methods to expose single and objective reality (Carson et al. 2001). Kivunja and Kuyini (2017:30) succinctly put this worldwide view as follows:

> Positivism research paradigm relies on deductive logic, formulation of hypotheses, testing those hypotheses, offering operational definitions and mathematical equations, calculations, extrapolations and expressions, to derive conclusions.

Rahi (2017:1) pointed out that positivism paradigm can also be referred to as scientific method, empirical science and quantitative research. This research paradigm advocates that true knowledge can be acquired through experiment and observation; and usually select the scientific technique to generate knowledge (Rahi 2017). In comparing positivism and interpretivism, Thanh and Thanh (2015:25) affirmed that:

> Positivists often accept only one correct answer while interpretivism is much more inclusive, because it accepts multiple viewpoints of different individuals from different groups.

4.2.3. Post-positivism

According to Kivunja and Kuyini (2017:32), post-positivists believe that reality is imperfect, and that truthfulness is not absolute but probable. The authors further submitted that this paradigm tolerates observations without formulation of hypotheses to be tested. Also, post-positivism tends to provide the world view for the most research that is situated on human behaviour. Wiewiora (2011) posited that post-positivism paradigm is situated between interpretivism and positivism, which assist the researcher to employ both approaches in a single study Post-positivism combines both quantitative and qualitative (otherwise known as mixed methods) and the results from these approaches enhance each other in evaluating the findings (Gray 2004:8). Wildemuth (1993:466) stressed that:

> Studies that are based on the post-positivist framework are theory-driven and principally concerned with verifying and testing theories rather than developing them.

The choice of mixed methods technique is inspired owing to its wholistic and capability of giving conviction in the outcomes (Giddings 2006: 198). “Post-positivism research often looks for the discovery of universal and critical theory or rules” (Thanh and Thanh 2015:25). Post-positivist research admits that background, theories/models, knowledge, and values of the researcher may influence what is observed (Robson 2002). Pickard (2013) posited that the concepts of quantification and generalization can be rooted from the original positivism which remains predominant.

Similarly, Rahi (2017:1) stressed that the combination of interpretivism and positivism is referred to as pragmatism. Scholars such as Feilzer (2009); Szyjka (2012); Wiewiora (2011); Thanh and Thanh (2015); Rahi (2017); and Kivunja and Kuyini (2017) affirmed that pragmatism type of research allows for the utilisation of mixed methods research and modes of analysis so as to produce new and useful knowledge. In consequence, the post-positivism research paradigm was adopted for this study. This approach was adopted to reveal the true reality of ICT skills on knowledge sharing among librarians in South-West Nigeria. In addition, the paradigm is regarded as the most grounded approach to research (Feilzer 2009:6). Consequently, several studies (Alabi 2016; Kolawole 2016; Adeleke 2017; Okite-Amughoro 2017; Maiga) have adopted post-positivism research paradigm in the field of information studies.

4.3. Research approach

Research approaches provide the intersection between the philosophical expectations, different procedures and methods of conducting a research (Kolawole 2016:84). Creswell (2014:32) posited that qualitative and quantitative research methodologies ought not be seen as rigorous, distinct categories and classifications. Rather, they "represent different ends on a continuum" (Newman and Benz 1998:9). There are three primary categories of research approaches, namely qualitative, quantitative and mixed research methods (Kothari 2004; Edmonds and Kennedy 2013; Creswell 2014).

4.3.1. Quantitative

According to Creswell (2014:155), quantitative research is an:

> approach in which the researcher mainly uses a post-positivist paradigm for developing knowledge. This method employs plans of inquiry such as surveys, experiments, and collection of data on determined instruments that yield statistical data.

Quantitative research is the one that is usually associated with the traditional mode of the scientific research that moves from theory to operationalisation to observation (Iyiogwe 2002:22). Chior

(2009) stressed that the essence of quantitative research is the verification of logically deduced theories. Iyiogwe (2002) posited that quantitative research places accentuation on measurable information and the utilization of this information to evaluate hypotheses.

4.3.2. Qualitative

According to Creswell (2002:18), qualitative research is the approach in which the

> investigator frequently claims knowledge that are based mainly on constructivist viewpoints (that is, multiple meanings of individual experiences, with a purpose of developing a pattern or theory) or participatory perspectives (that is, political, issue-oriented, collaborative) or both.

According to Gorman and Clayton (2005:3), qualitative research is described as:

> a process of inquiry that draws data from the context in which events occur, to describe these occurrences, as a means of determining the process in which events are embedded and the perspectives of those participating in the events, using induction to derive possible explanations based on observed phenomena.

Qualitative research involves the examination of phenomena in the natural context; and testing of hypothesis in the same way as quantitative research (Iyiogwe 2002). The qualitative research applies mostly to non-statistical data approach (Iyiogwe 2002; Chior 2009), and employs strategies of inquiry which include phenomenologies, case studies, ethnographies, narratives, and grounded theory studies (Creswell 2014). The method allows researcher to collect open-ended and emerging data with the primary intent of making logical inferences from the data (Creswell 2014).

4.3.3. Mixed methods

A mixed research method is the approach in which the investigator inclines to establish knowledge assertions on a practical point of views (for instance, consequence-oriented, pluralistic and problem-centered) (Creswell 2014:18). Mixed method research uses schemes of investigation that include information collection (sequentially or simultaneously) to best grasp problems of research

(Creswell 2014:18). Data collection includes collecting both quantitative information (that is, on instruments) and qualitative information (that is, on interviews, observation or focused group discussion) as such the final database will represent both quantitative and qualitative data (Creswell 2014:215).

According to Giddings (2006:202), the following key points form the basis of the mixed methods research approach:

i. The claim that "mixed-method is the third methodological movement is based on the erroneous assumption that mixing qualitative and quantitative methods will produce the 'best of both worlds";

ii. "Mixed-method use of the normative descriptors 'qualitative' and 'quantitative' effectively marginalises the methodological diversity within them";

iii. Ideologically, "mixed-method continues the privileging and dominance of the positivist scientific tradition";

iv. The "mixed-method claim of certainty in research findings serves well the powerful nexus of economic restraint and evidence-based practice"; and

v. "A co-operative inquiry framework for mixed-method research would move the debate beyond methodological competitiveness to a collective approach to dealing with social and health disparities and issues" (Giddings 2006:202).

The mixed method research approach is employed in this study. The reason for adopting mixed methods is that it provides more comprehensive evidence for investigating research problem than using either quantitative or qualitative method alone. It is essential to adopt a mixed method approach because employing single research method is not sufficient to examine the complexity involved in the present study. Mixed methods enhanced data collection on the experiences, attitudes and feelings of the participants about how knowledge can be better shared among librarians. The embedded type of mixed method research design (Creswell and Clarke 2010: 90-93) was adopted in this study. For the purpose of easy understanding, the researcher combines the data gathering at both quantitative and qualitative levels and analyse the data embeddedly with the qualitative data complimenting the quantitative.

Creswell (2009) affirmed that the combination of quantitative and qualitative approaches was to complement the shortcoming of both research methods and strengthen one another. Creswell and Plano-Clark (2007) submitted that mixed method provide more evidence-based for problem solving than quantitative or qualitative alone. Furthermore, the mixed method technique enables the investigator to gain insight into the study and provide a better perception of the research problem (Creswell 2009; Ngulube, Mokwatlo and Ndwandwe 2009). Gorard (2004) identified a mixed method approach as a critical element to improve humanities and social science research. Creswell (2003) asserted that adopting a mixed methods research approach is the most appropriate procedures to investigate a phenomenon. The choice of this research method in relation to the objective and research questions is presented in Table 4.1 below.

Table 4.1: Data sources and data analysis strategies

	Research Questions	Approach	Data Sources	Data Analysis strategy used
1	What is the level of ICT skills among librarians in federal university libraries in South-West Nigeria?	Quantitative and Qualitative	Survey questionnaire and Interview	Descriptive statistics: frequency counts, percentage, mean, standard deviation and Thematic content analysis
2	What are the effects of ICT skills on knowledge sharing among librarians in Federal university libraries in South-West Nigeria?	Quantitative and Qualitative	Survey questionnaire and Interview	Descriptive statistics: frequency counts, percentage, mean, standard deviation and Thematic content analysis
3	What are the methods of knowledge sharing among librarians in Federal university libraries in South-West Nigeria?	Quantitative and Qualitative	Survey questionnaire and Interview	Descriptive statistics: frequency counts, percentage, mean, standard deviation and Thematic content analysis
4	What is the level of knowledge sharing among librarians in the Federal university libraries in South-West Nigeria?	Quantitative and Qualitative	Survey questionnaire and Interview	Descriptive statistics: frequency counts, percentage, mean, standard deviation. Thematic content analysis
5	What are factors affecting knowledge sharing among librarians in the Federal university libraries in South-West Ni	Quantitative	Survey questionnaire	Descriptive statistics: frequency counts, percentage, mean, standard deviation.

Various experimental studies have applied the mixed-method research approach to underpin their study in the field of information science and librarianship. The following are the examples of such studies: Smarkola (2011); Evangelista, McKinnon, and Sweeney (2013); Obiri-Yeboah, Fosu and Kyere-Djan (2013); Kamau (2014). The authors also stressed that employing mixed method will enhance the depth of research. Furthermore, the authors also confirmed that mixed method guarantees the achievement of research procedure as a method that can improve the findings of another. The "mixed methods approach is chosen because it is holistic and capable of providing more certainty in the results" (Giddings 2006: 198). Collins, Onwuegbuzie and Sutton (2006:76) highlighted four justifications for conducting mixed-method research, including:

i) participant enrichment;

ii) fidelity of instrument;

iii) integrity of the treatment of the research instrument; and

iv) enhancement of the research's significance.

4.4. Research Design

Research design is the plan on how to go about data gathering and analysis with the aim of providing solutions to the problem under investigation (Chior 2009:9; Onodugo, Ugwuonah and Ebinne 2010:65). Also, the research design is a blueprint on how the investigator intends to complete his/her research work (Babbie and Mouton 2001). According to Creswell (2003:3) a research design are the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. Iyiogwe (2002:25) viewed a research design as an exhaustive data gathering arrangement for which reason is to answer research inquiries and in addition test research hypothesis. According to Iyiogwe (2002:26) research designs are aimed at achieving the below objectives:

i. To gain familiarity with a phenomenon or accomplish fresh understandings;

ii. To decide the recurrence with which something happens or with which it is related, with something unique.

iii. To depict precisely the attributes of a specific individual circumstance or group, with or without particular preliminary hypothesis about the nature of these qualities.

iv. To test a hypothesis of causal relationship among variables; and

v. To solve problems (Iyiogwe 2002:25).

Similarly, Sekaran (2003:29) and Kothari (2004) submitted that the research design offers important decision-making options, particularly on how data can be well-collected and analysed to arrive at a solution. Creswell and Plano-Clark (2007) posited that research design guides, directs and allows for the gathering and breakdown of quantitative and qualitative data. A research design is a strategy for collecting and analyzing evidence that will make it possible for the researcher to answer whatever questions he/she has asked (Okite-Amughoro 2017:108). Creswell (2003:36) described a research design as the procedures, plans, and strategies for research that span the steps from broad assumptions to specific techniques of collection, analysis as well as interpretations of data.

Also, Chukwuemeka (2002) noted the research design involves the outlining of strategies that would be utilized in the field work. Asika (1991) postulated that the particular reason for research design is to acquire information that will empower the investigator to conduct pre-set hypothesis or answer research inquiries of the study. Eboh (2009) stressed that research design seeks to answer the questions about the what, where, when, how and by what means data would be generated to provide the solutions under investigated. Chior (2009:10) affirmed that research design offers a step-by outline for the conduct of any given investigation. However, no single design will be suitable for investigating all problems (Chior 2009). Therefore, it is pertinent for researchers to put into consideration the relevance of the proposed design to the research purpose as well as its economy in terms of materials available. The descriptive survey research guided this study.

Ekeh (2003) viewed descriptive research as the types of research which deals with data collection for the purpose of describing, interpreting, evaluating and analysing existing conditions or variables and prevailing situations. Descriptive research is non-experiment in nature and is concerned with the present and describes what exist (Chior 2009). Furthermore, descriptive research describes events, situations or phenomena as it is at the time of study (Ekeh 2003). Descriptive research is undertaken in order to ascertain the nature of a give phenomenon (Iyiogwe 2002). The author further affirmed that an approach to descriptive research is the survey research

method or experimental research method. Survey research design is regarded as the type of design in which a gathering of individuals or things is studied by gathering and analysing gathered data from just a couple of individuals thought to be a representation of the whole group (Iyiogwe 2002:26; Chior 2009:12). Nworgu (1991) submitted that survey research design specifies how such data will be collected and analysed. The survey research method is mostly concerned with the gathering, presenting analysing and interpreting data for the purpose of describing practical beliefs, attitude as well as on-going process (Iyiogwe 2002; Chior 2009).

A descriptive survey research design employs a cross-sectional method to a particular study (Chior 2009:13). It is also based on a sampling technique that is aimed at taking into consideration all variants in a study population (Babbie 1998; Greener 2011). Descriptive survey research design was used for this study because it is connected with the philosophical paradigm of post-positivism which underpins the study. The choice of the descriptive survey research design owes to its capability to generate scientific data on a large population group that are representative of a broader population for the purpose of testing theory (Leedy and Ormrod 2001).

Furthermore, this method was chosen because of the methodological procedure as well as the philosophical assumption underlying the study (Kolawole 2016: 87). The choice of the descriptive survey research design was also because information gathered from population sample was used to draw inferences about some characteristics, attitudes, and features of the whole population (Adeleke 2017:71). Babbie and Mouton (2001) stressed that the most suitable method in social science and humanities research is descriptive survey research design. It also allows the researcher to collect data using questionnaires as well as focus group discussions (Babbie and Mouton 2001).

4.5. Population of the study

Population in research means the entire members of the universe being studied (Personal, animals or objects possessing the qualities been studied) (Chior 2009). Similarly, Kajang, David and Jatau (2004:57) described population as the totality of all the subjects of the universe which have common quantities that the researcher wishes to study (for example, people, trees, rivers, animals, schools, specimens or countries). The defined population of any study must have at least one characteristic that differentiates it from another groups (Kajang, David and Jatau 2004). A population is viewed as a group of elements from which an investigator desires to draw a

conclusion (Scheaffer, Mendenhall and Ott 2006). Leedy and Ormrod (2005:184) described population as a homogenous group of individual units. Banerjee and Chaudhury (2010:60) also described a population as an entire group about which some information is required to be ascertained. Welman, Kruger, and Mitchell (2005) described a population as the study entity that consisted of a group of people, organisations, social events, institutions, organizations and products.

According to Kajang, David and Jatau (2004:50), a population refers to the target group which is the universe of people or objects in which the researcher is interested. A population is thus described as the group in which the researcher is interested in gaining information and drawing conclusions or an inference (Kajang, David and Jatau (2004:51). The authors also noted that a population of a study to a large extent could determine what type of conclusion could be drawn from a study. Similarly, Onodugo, Ugwuonah and Ebinne (2010:68), viewed a population as all the people or things that make up the focal point of a study. The population of a study is a group that will supply the required information that the researcher desires to generate. A population may be small or large, where it is possible the entire population should be studied. However, if a population is large such that it is not possible to study it as it is, then a part of it will be selected and studied (Chior 2009:34). The author further noted that a population defines the limit within which the research findings are applicable.

The target population for this study consisted of librarians in the Federal University of Agriculture (FUNAAB), Abeokuta; Federal University Oye (FUOYE), Ekiti; Federal University of Technology (FUTA), Akure; University of Ibadan (UI), Ibadan; University of Lagos (UNILAG), Lagos, and Obafemi Awolowo University (OAU), Ile-Ife, all in South-West Nigeria. All the librarians including the university librarians were selected for the study, making a total of 114 librarians (See table 4.2). The total number of librarians was obtained through a preliminary survey by personal contact (phone calls) and the Nigerian Library Online Forum (NLOF) listserv (2016). Librarians are regarded as those working at the library with at least Master's degree. Professional librarians in Nigeria created this forum for interaction and communication with one another on professionally related issues and for opportunities in librarianship and information studies.

Although there are six geopolitical zones in Nigeria, the South-West zone was chosen because it is the central hub of educational activities and has the highest number of tertiary institutions, while

the Federal universities were selected because they have the highest number of librarians. The total number of the librarians is presented in Table 4.2 below.

Table 4.2. Population of the study

Institutions	**Number of Librarians**	**University Librarians**
UI	29	1
UNILAG	20	1
FUNAAB	22	1
FUTA	11	1
FUOYE	4	1
OAU	22	1
Total	**108**	**6**
Grand Total	**114**	

Due to the small size of the population, the census approach was adopted for this study. All the 114 librarians (NLOF Listserv 2016) were considered for this study and a semi-structured interview was conducted with the heads of the libraries (University Librarians) of the 6 Federal university libraries (See table 4.2). The reason for interviewing the university librarians was because they are members of the university management and as such great onus lies on them to possess and provide in-depth knowledge about ICT skills of librarians on knowledge sharing in their institutions' libraries. Creswell (2009:204) recommended the use of a census when the entire population is being studied. Israel (1992) indicated that if the whole sample is 200 or less, it is suitable for conducting a poll. Furthermore, Israel (1992:2) submitted that a census eliminates sampling error and provides data on all the individuals in the population. The total population of this study is 114 which is less than 200; hence, the researcher considered the census method to be most suitable as noted by Israel (1992).

4.7. Data collection techniques

Bhandarkar and Wilkinson (2010) noted that data collection involves the administration of research instruments on the respondent to answer a specific question. Data collection focuses on obtaining the required information for the purpose of verifying a hypothesis and answering researcher questions (Kajang, David and Jatau 2004:75). Iyiogwe (2002) affirmed that the greatest of the effort of a researcher is situated on data collection. In addition, to avoid hindrance in the data collection, the researcher should arm him/herself with adequate and sufficient patience, courage, native wisdom as well as a good research design when collecting data (Iyiogwe 2002:120).

Onyango (2002); Iyiogwe (2002); Kajang, David and Jatau (2004), postulated that in research, there are five main techniques in data collection. These are the questionnaire, interview schedule, observation guide, as well as the examination of documented records and focus groups. Data collection is the systematic way or method in which information is measured and gathered from different sources to get a complete, precise, detail as well as accurate picture of an area of interest (Creswell 2003). Data collection allows a respondent to answer pertinent questions, appraise outcomes as well as make estimates about future likelihoods and trends (Pickard 2013).

Harris and Brown (2010:1) affirmed that:

> questionnaires and semi-structured interviews are often used in mixed method (pragmatism) studies to generate and confirm results in spite differences in techniques of data collection, analysis as well as data interpretation.

Kolawole (2016:93) described semi-structured interviews as the qualitative method of inquiry which combines a pre-determined set of open questions with the chance for the interviewer to further explore specific answers. Responses are not restricted in a semi-structured interview, dissimilar to the questionnaire that includes questions with pre-defined answers (Kolawole 2016:93). The use questionnaire and semi-structured interviews were considered suitable for obtaining quantitative and qualitative data.

This study obtained quantitative data on the ICT skills on knowledge sharing among librarians through a questionnaire, while qualitative data was used to gather information from library heads (University Librarian) using a semi-structured interview schedule. The questionnaire was adapted to provide the ICT skills possess by librarians to share their knowledge in the library (Buabeng-Andoh 2012). The interview schedule was used to obtain qualitative data on ICT skills infrastructure, ICT policy and so on.

4.7.1 Questionnaires

A questionnaire is a listing of inquiries intended to acquire data from indicated target respondents (Onodugo, Ugwuownah and Ebinne 2010:75). Iyiogwe (2002:121) viewed a questionnaire as a list of questions to make a reply. Similarly, Chior (2009:39) described a questionnaire as a set a of written question or queries or statements to be responded to in writing by the subjects being studied. Kolawole (2016:93) submitted that questionnaires are typically paper-and-pencil instruments that are completed by respondents. The questionnaire allows for questions and responses that can be quickly analysed to attain the desired goals and objectives of the research (Kolawole 2016:93). A questionnaire is adjudged suitable when the purpose of design is met.

Similarly, Kajang, David and Jatau (2004:76) defined a questionnaire as a document consisting of a series or list of question-items or statements relating to the variable or problem being investigated. The questionnaire is regarded as the most commonly used tool especially for surveys covering a wide range of sample population (Kajang, David and Jatau 2004; Onodugo, Ugwuonah and Ebinne 2010). Denscombe (2014) referred to the questionnaire as a structured research tool used for data collection from a large number of people. The author further noted that a questionnaire should contain the following to be adequate for a study:

i. designed to gather relevant information that is useful for analysing data; and

ii. it should comprise a list of queries as well as gathers information through asking participants about study.

According to Kajang, David and Jatau (2004;77); Chior (2009: 40), for a questionnaire to be considered good and adequate for research purposes, the following characteristics must be fulfilled:

i. Relevance;

ii. Clarity;

iii. Consistency;

iv. Quantifiability; and

v. Legibility (Choior 2009: 40; Kajang, David and Jatau 2004;77).

Quantitative data were gathered from librarians using a structured questionnaire. The questionnaire was designed to examine the level of ICT skills, effects of ICT on knowledge sharing, methods of knowledge sharing, the degree of knowledge sharing, and factors affecting knowledge sharing as presented in Appendix 2. Some of the items in the questionnaire were adapted from related studies such as Buabeng-Andoh (2012), Van den Hooff, Elving, Meeuwsen, and Dumoulin (2003) and Fatoki (2017). The questionnaire was administered to the librarians in their respective offices in UI, OAU, UNILAG, FUNAAB, FUTA, and OYE.

The questionnaire was divided into seven sections to reflect the area covered in the research questions (See appendix 2). Segment A sought information on demographic variables of the respondents. This segment aims to collect data on the name of the institution, the name of the library, position/rank, gender, years of experience, age category and highest qualification. Section B addressed the level of ICT skills. The ICT skills were divided into five sections namely: Knowledge of computer system; Word processing skills; Spread sheet (example, Microsoft Excel and numbers); Presentations skills (example, Microsoft power point and keynote); and Internet use and search skills. A 5 Likert scale point was used for the queries that range from Excellent, Above Average, Average, Below Average, Very Poor. Section C examined the effects of ICT on knowledge sharing. The questions asked were closed-ended and respondents were required to rate their answers on a 5 Likert scale that ranged from Strongly disagree to Strongly agree. Section D investigated methods of knowledge sharing. The questions aimed to know the technique used in sharing knowledge. Respondents were to tick as many as possible options in this section. Section E examined the frequency of knowledge sharing. The respondents were required to rate their answer on a 5 Likert scale from Daily, Weekly, Monthly, Rarely and Never. Section F sought information on the level of knowledge sharing. The questions asked were closed-ended and

required the respondents to rate their response on a 5 Likert scale ranging from Strongly disagree to Strongly agree. Section G examined the factors affecting knowledge sharing among librarians. The elements were divided into three namely: Individual factors, Organizational factors and Technological factors. The questions asked were closed-ended and required the respondents to rate their response on a 5Likert scale ranging from Strongly disagree to Strongly agree. The survey questionnaires were distributed to the professional librarians in their offices. Rowley (2012) highlighted some of the benefits of the questionnaire in research:

i. it is easy to access geographically dispersed subjects;
ii. it is relatively cheap (low cost); and
iii. it is relatively faster to gather data from a large people it is easy to access geographically dispersed subjects.

According to Saczynski, McManus, and Goldberg (2013:9), the disadvantages of questionnaire in research are as follows:

i. Validating individual survey responses can be difficult, burdensome, costly, and of questionable utility;

ii. If response rates are less than desirable, one may question the representativeness of the study sample and its generalizability;

iii. Responses might differ if questions are asked in-person, by phone, or by mail/internet;

iv. There is possibility of low return rates; and

v. The primary researcher has limited control over what happens in the field.

In spite of these challenges however, the researcher ensured that all ambiguous terms and statements as well as duplication of questions were eliminated through face validity and pre-test. The questionnaire was then personally administered and followed up with the help of other research assistants.

4.7.2 Interview schedule

The interview schedule, which refers to the social relationship, is aimed at exchanging information between the researcher and the participant (Vosloo 2014:331). An interview is a data gathering instrument that enables a seeker of information to have an in-depth knowledge of an issue of concern through a face-to-face interaction (sometimes by telephone conversation) with the provider of such information (Iyiogwe 2002:126). Similarly, Chior (2009:42), submitted that an interview involves eliciting information from the respondents through some verbal interaction between them and the researcher. On the other hand, Onodugo, Ugwuonah and Ebinne (2010:77), described interviewing as an inquiry and answer situation between the investigator and the respondent with a view to evoking significant information for the investigation being completed. Interviewing can also be regarded as a method of data collection technique referring to a face-to-face communication where the researcher asks respondents questions to obtain answers relevant to the researcher problem (Iyiogwe 2002; Chior 2009; Onodugo, Ugwunoah and Ebinne 2010).

Consequently, Iyiogwe (2002:129); Kajang, David and Jatau (2004:82); Chior (2009:42); Onodugo, Ugwunah and Ebinne (2010:77) draw the following advantages in favour of interview surveys:

i. Interviews are generally flexible means of data collection;
ii. Difficult or mis-understood questions can be explained or re-phrased;
iii. Additional information on the personal characteristics of respondents can be collected;
iv. The memory of the respondent can be stimulated to aid recall;
v. They are good for both literate and illiterate subjects;
vi. They are suitable for investigating complex issues in which different types of information are sought from different group of people;
vii. In-depth information can be gathered;
viii. The face-to-face exchanges can reveal non-verbalized gestures;
ix. They give considerable allowance to correct one's approach as the interview progresses; and
x. They are suitable for follow-up studies since respondents are known.

Notwithsatanding the merits of the interview schedule, however, there are some drawbacks which are identified by Rahman (2017:105). These include:

i. Policy-makers may give low credibility to results from qualitative approach;
ii. Smaller sample size raises the issue of generalizability to the whole population of the research;
iii. Qualitative research methods sometimes leave out contextual sensitivities, and emphasize more on meanings and experiences; and
iv. Data analyses in qualitative research takes a considerable amount of time.

Despite the shortcomings, the researcher ensured all posissible means to meet the university librarians personally in their respective offices to conduct the interview as scheduled. Though the researcher intended to conduct a face-to-face interview with the university librarians, but due to their busy schedule, this led to the use of semi-structured interview (open ended questions).

Interviews could be in structured or semi-structured format or unstructured format (Thomas 2010 and Denscombe 2014). Bernard (2012) affirmed that the suitability of semi-structured interview is guaranteed when an interview guide is used. This gives a clearer set of direction and provides instruction that will assist in collecting reliable data for qualitative study (Bernard 2012). The semi-structured interviews are regarded as in-depth interviews where the participants must react or answer pre-set open-ended queries/question (Jamshed 2014), based on some structured questions from which an interviewee branches off to explore in-depth. A semi-structured interview gives an opportunity for probing in order to obtain additional information needed (Kajang, David and Jatau 2004).

The semi-structured interview was employed for this study due to its flexible procedure for small-scale research. It also assisted in uncovering missing perspectives as well as complimenting information gathered from the questionnaires (Gorsuch 2002). The semi-structured interview schedule was administered to library heads (University Librarians) in the selected federal university libraries (see Appendix 4). These university librarians are principal officers in their

respective universities and thus, members of the university management. They are influential in formulating policies and decision-making in the libraries and the university at large.

4.7.3 Administration of research instruments

The researcher, with the aid of four research assistants administered the questionnaire and interview schedule on the participants. Four research assistants assisted in distributing the questionnaires to the librarians. A total of 114 copies of the questionnaires were administered to librarians in their offices in the selected Federal University Libraries namely: UI, FUNAAB, OAU, FUTA, UNILAG, and OYE. The participants were obliged to complete the survey (questionnaire) and return after completing.

Semi-structured interviews were conducted with six University Librarians in UI, FUNAAB, OAU, FUTA, UNILAG, and OYE. The interview questions were open-ended and tailored sequentially and not rigid. The researcher booked an appointment with the selected participants to gather data.

4.8 Data analysis

Data analysis comprises many interconnected processes that assist in summarizing collected data (Kothari 2004). It is also the process of manipulation, organization, and consideration of the connotation of data accumulated (Kothari 2004:37).

Statistical Package for the Social Sciences (SPSS) software allows for large data processing and organisation as well as interpretation of such data (Polit and Beck 2004). The data obtained quantitatively from the questionnaire was sorted, coded and analysed using the statistical package for social sciences (SPSS). The results were presented in tabular form using frequency distribution, percentage and charts. The choice of SPSS lies in its good statistical practices and its outstanding data presentation capabilities. SPSS was also chosen due to its "popularity within the academic and business setting, making it the most broadly used statistical package in social sciences" (Arkkelin 2014:2).

The qualitative data obtained from interviews was analysed using thematic content analysis. Thematic analysis (TA) is the most popularly used analysis in any qualitative study (Javadi and Zarea 2016:33). The rationale for choosing TA is because it affords the opportunity for

understanding the potential of any issue more broadly (Marks and Yardley 2004). The results of the interview schedule were then coded using thematic content analysis to identify similar themes.

4.9 Validity and reliability

Validity and reliability are the criteria used in judging the quality of all standardized scale in quantitative measures (Maiga 2017:86). Kajang, David and Jatau (2004:86) defined validity as truthfulness which asks if the instrument measures what it purports to measure. In other words, this means the accuracy with which the instrument measures what it is intended for. Chior (2009:55), stated that validity are the procedures adopted in ensuring the measurability of the instrument used is described. Lodico, Spaulding, and Voegtle (2010) viewed reliability as the uniformity of scores, that is, the capability of the research instruments to yield almost the same score for a researcher over repeated testing. Bryman (2012:116) described reliability as the "uniformity of a measure of a concept".

Polit and Beck (2004) submitted that in quantitative research, the validity of instruments is a quality standard that shows the degree of accuracy of a study. Validity deals with the accuracy as well as the degree of correctness demonstrated by a researcher from the data/information in a study (Ivankova and Creswell 2009:154). Neuman (2011) affirmed that reliability and validity of research instruments are ideas that help to found and establish the trustworthiness and credibility of findings. Pallant (2013:6) noted that the reliability scale shows how free it is from error.

Consequently, the questionnaire was pre-tested on 30 librarians at Ladoke Akintola University (LAUTECH), Ekiti State University (EKSU) and Lagos State University (LASU). Ten copies of the questionnaire were administered in each university mentioned to determine their understanding and clarity of the questions asked. This sample unit was not included in the main population of the study.

The overall reliability was generated with the use of Alpha Cronbach Coefficient to determine the interior consistency of the research instrument. The Information and Communication Technology Skills on Knowledge Sharing survey instrument was tested in its entirety r = 0.93 while the subscales were also tested independently. The reliability of each factor was as follows: Level of ICT Skills, r = 0.98; Effect of ICT Skills on Knowledge Sharing r = 0.99; Methods of Knowledge Sharing, r = 0.85; Frequency of Knowledge Sharing r = 0.94; Level of Knowledge Sharing, r =

0.7; and Factors Affecting Knowledge Sharing r = 0.96. The reliability test results are presented in Table 4.3 below.

Table 4.3: Summary of results from scale purification of the questionnaire

Notation	Dimension/Item	Reliability	Factor loading of items on dimension to which they belong	Corrected item-to-total correlation
KCS1	I can locate and run a programme (software application) on computer		.979	.766
KCS2	I can use CD-ROM based software		.978	.861
KCS3	I can use cloud based software e.g. drop box, e-mail		.980	.487
KCS4	I am able to organize electronic files into folders		.979	.756
KCS5	I can search for files on the computer system		.978	.886
KCS6	I can backup files onto various media types (CD-RW, USB, Hard drive etc.)		.979	.804
KCS7	I can connect computer and its peripherals (mouse, keyboard, monitor, ipad etc.)		.979	.652
WPS8	I can use simple editing features e.g. bold, italics, font size etc.		.979	.846
WPS9	I can import text and images into a word-processed document		.979	.828
WPS10	I can insert tables in a document		.979	.827
WPS11	I have the skill to alter the layout and positioning of text and images		.979	.840
WPS12	I can create new document templates		.979	.776
WPS13	I can divide page layout into columns		.979	.750
S14	I am able to input data in rows and columns		.979	.810
S15	I can sort data		.979	.687
S16	I can input and use formula for solving problems		.979	.703
S17	I am able to produce charts and graphs for data analysis		.979	.779
S18	I can print a selected area		.979	.793
P19	I can create a basic presentation package		.979	.776
P20	I have the skill to modify colours of text, background and lines		.978	.876
P21	I can change slide timings, animations and presentation options		.979	.757
P22	I can produce appropriate handout formats		.979	.778
IUSS23	I can access an Internet site via its website address		.978	.877
IUSS24	I can use search engines to find information		.979	.865
IUSS25	I can use social media platforms effectively		.979	.802
IUSS26	I can use cloud computing e.g. Google drive, drop box etc.		.979	.678
IUSS27	I can use electronic mail effectively (e.g. Gmail, Yahoomail, Hotmail etc)		.978	.856
IUSS28	I can download files from the internet		.979	.709
IUSS29	I can attach documents or files to e-mails		.979	.802
IUSS30	I know how to work in a networked environment	0.98	.979	.806
EIS1	ICT provides easy access to knowledge by librarians		.984	.953
EIS2	ICT promotes timely dissemination of knowledge		.984	.964
EIS3	ICT promotes dissemination of knowledge to wider audiences		.983	.973
EIS4	ICT facilitates quick delivery and dissemination of knowledge		.983	.972

EIS5	ICT enhances knowledge sharing and solves existing knowledge sharing issues		.984	.953
EIS6	ICT helps to locate the various elements relevant to the process of knowledge sharing		.984	.939
EIS7	ICT facilitates new organizational forms for knowledge sharing such as Online knowledge tram.		.987	.876
EIS8	Sufficient skills to use social media enhances knowledge sharing.		.985	.913
EIS9	Promoting knowledge sharing and learning	0.99	.987	.882
MKS1	Face-to-face		.850	.000
MKS2	Meetings		.849	.168
MKS3	Storytelling		.844	.350
MKS4	Peer assistance		.839	.464
MKS5	Training (seminar/workshop/symposium)		.852	.111
MKS6	Mentorship		.838	.506
MKS7	Brainstorming		.837	.523
MKS8	Community of practice		.839	.475
MKS9	Web conferencing (video/audio conferencing		.842	.405
MKS10	Share net		.840	.460
MKS11	Online discussion group/fora.		.840	.467
MKS12	Electronic white board		.838	.501
MKS13	Instant messaging (WhatsApp, Imo, Instagram, Facebook messenger, Skype, Yahoo messenger)		.836	.597
MKS14	Electronic mail (e-mail)		.850	.000
MKS15	RSS Feed		.845	.334
MKS16	Blog		.842	.414
MKS17	Wikis		.839	.478
MKS18	Social networking site (MySpace, Facebook, Flickr, Twitter,)		.837	.523
MKS19	Nigeria Library Online Forum		.837	.518
MKS20	Research gate/Academia.edu		.842	.405
MKS21	Teleconferencing		.837	.571
MKS22	Social bookmarking and tagging	0.85	.841	.423
FKS1	I always share with other librarians in my library whenever I have learned something new		.934	.747
FKS2	I tell the librarians in my library what I know, when they ask me about it		.921	.841
FKS3	I tell the librarians in my library about my skills, when they ask me about it		.932	.751
FKS4	I ask other librarians in my library what they know when I need particular knowledge about something		.925	.820
FKS5	Librarians in my library share with me what they know, when I ask them about it		.912	.909
FKS6	Librarians in my library share with me about their skills, when I ask them about it	0.94	.925	.816
LKS1	I'm afraid to lose influence and recognition when sharing knowledge		.689	.266
LKS2	I keep important information to myself		.730	-.108
LKS3	I perform more effectively when I share what I know		.701	.221
LKS4	Whenever I have learned something new, I tell other librarians in my library about it		.644	.654

LKS5	I tell the librarians in my library what I know, when they ask me about it		.645	.644
LKS6	I tell the librarians in my library about my skills, when they ask me about it		.645	.595
LKS7	I ask other librarians in my library what they know when I need particular knowledge about something		.648	.628
LKS8	Librarians in my library tell me what they know, when I ask them about it		.649	.570
LKS9	Librarians in my library tell me about their skills, when I ask them about it		.627	.621
LKS10	I'm afraid to lose influence and recognition when sharing knowledge		.752	-.110
LKS11	I keep important information to myself		.729	.015
LKS12	I perform more effectively when I share what I know		.665	.465
LKS13	It is important that librarians are interested in one another's knowledge	0.7	.669	.433
IF1	I do not have enough time to focus on sharing knowledge		.956	.631
IF2	My colleagues do not appreciate the knowledge I wish to share		.955	.643
IF3	I am not aware of the value and benefit of sharing possessed knowledge to others		.954	.738
IF4	Sharing my knowledge may reduce or jeopardize others job security.		.955	.730
IF5	I cannot share my knowledge due to poor communication and interpersonal skills		.954	.733
IF6	My institution does not give me the incentive to want to share knowledge		.953	.818
IF7	There are no reward incentives		.955	.691
IF8	My boss/supervisor does not support my efforts to share my knowledge		.953	.812
IF9	Reluctance to use technology due to lack of familiarity to knowledge sharing		.955	.704
OF1	Corporate culture in my institution does not provide sufficient support for knowledge sharing practices		.955	.697
OF2	The physical work environment and layout of work areas restrict effective knowledge sharing practices		.954	.769
OF3	There is no organizational policy as regard knowledge sharing		.954	.731
OF4	Lack of formal and informal spaces to share and generate my knowledge		.954	.774
OF5	Shortage of appropriate infrastructure to support knowledge sharing practices		.954	.782
OF6	Knowledge flow and communication are restricted into certain directions (e.g. top-down)		.954	.759
OF7	There are no reward incentives		.954	.774
OF8	Lack of alternative power supply.		.956	.554
TF1	There is no IT infrastructure in place for sharing knowledge (Internet connectivity, Inadequate computers, LAN, WAN.)		.956	.553
TF2	The organization does not provide technological know-how share knowledge		.955	.692
TF3	I do not have sufficient technological skills to share knowledge		.958	.402

TF4	Lack of technical support and maintenance of integrated IT systems to share knowledge		.955	.686
TF5	Lack of organizational training to use new technology to share knowledge		.953	.808
TF6	I have enough Internet experience to share my knowledge	0.96	.959	.286

Please note that the abbreviations in the notation column are expanded below:

KCS Knowledge of computer system
WPS Word processing skills
S Spreadsheets
P Presentation
IUSS Internet use and search skills
EIS Effects of ICT skills
MKS Methods of knowledge sharing
FKS Frequency of knowledge sharing
LKS Level of knowledge sharing
IF Individual factors
OF Organisational factors
TF Technological factors

However, in Section F under level of knowledge sharing, items FKS7-9 were removed due to non-suitability of the measuring scale. In addition, item FKS 12 was deleted because the item was duplicated with FKS 3. Similarly, two items under Section F were also removed (LKS 2 and LKS 10) due to low reliability result generated (r =0.730 and 0.752). These amendments helped in increasing the reliability of LKS scale (0.781) before the administration of the questionnaire commenced.

4.10 Ethical considerations

Ethics is derived from the Greek word “ethos” which means the character or norm and implies a social code and conduct that transports integrity and consistent values (Partington 2003 cited in Vosloo 2014:351). Mouton (2001:238) is of the view that research ethics is concerned with what is wrong and right especially when conducting research. Gratton and Jones (2010) submitted that all researchers, irrespective of research designs; sampling procedures as well as the choice of

research methods, should adhere to ethical requirements. The study adhered to the University of KwaZulu-Natal (UKZN) ethics policy guidelines (2014). The questionnaires were administered to the respondents after the ethical clearance was granted to the researcher by UKZN to carry out the research. Permission was sought from the selected Federal university libraries and granted by the issuing gatekeepers' letter. The participants were informed (through the consent form) and the aim of the study was explained to them. Also, the confidentiality of the information provided by the participants was assured as well as their right to withdraw from the study at any point. Furthermore, permission was granted to participants who did not wish to partake in completing the questionnaire.

4.11 Evaluation of the research methodology

Scholarly works in educational research usually adopt various techniques and theories, as well as build upon relevant theoretical model especially in the education, humanities and social sciences (Hughes 1994). In the course of the research work, there is need for a researcher to be able to decide on the appropriate methodology to be adopted in line with the purpose of the study (Grix 2001), after a critical evaluation of relevant methodologies. According to Garaba (2010), it is essential to evaluate the research methods used in the study to determine what worked or could be done differently to yield better results in future research.

The researcher encountered a number of challenges including lack of willingness and negative attitude of the librarians to completing the questionnaires in the selected federal universities, unavailability of heads of the libraries (University librarians) due to busy schedules, refusal by some respondents to return the questionnaire, and inadequate funding among others. These set of challenges prolonged the duration of data collection, where the researcher had to engage in several follow-ups through telephone calls, text messages, e-mails and personal visitations. The entire process of data collection lasted for a period of three months (April to July 2018).

As far as the qualitative method was concerned, the researcher intended to conduct a face-to-face interview with the participants, but the nature of their work and official engagement prevented all scheduled appointments. Consequently, the participants requested for a printed copy of the interview schedule which was made available for them to be completed at their convenience.

Although the researcher experienced slight delay in the retrieval of the instruments (questionnaire and interview schedule) yet more than half of the questionnaire copies administered were retrieved while all the interview results were also retrieved. In all, there was a good response rate because out of the 108 copies of the questionnaire administered, 102 copies were retrieved representing 94.4% response rate while the qualitative survey yielded 100% response rate (See table 5.1a and 5.1b). However, the few non-responses recorded was due to the unavailability of some respondents as well as unwillingness to complete the questionnaire.

In view of the challenges encountered in the course of data collection, the reliability and validity of instrument were guaranteed with the simplicity and clarity of the items in the survey instrument; while these instruments were personally administered with the help of research assistants, and maintaining good rapport and networking with participants in the process. Considering the nature of this research, the research design adopted was very appropriate. The only limitation observed was that being a descriptive survey research, the researcher could only describe the results as observed and discovered from the field. As far as ethical issues were concerned, the researcher sought the consent of the participants before the instruments were administered on them. In addition, permission was obtained from the participating institutions and a gatekeeper's letter was issued prior the distribution of the instruments (See Appendices 6, 8, 10, 12,14 and 16). Also, the respondents were not in any way put under pressure or coerced to participate in the study. The issue of transportation was a major challenge during data collection, partly due to lack of funds as well as the need for the researcher to travel across the six universities in the southwest Nigeria. The various ICT-related terms used in the study were explained in the instruments to avoid ambiguity. However, these were familiar terms to the librarians as they encounter and use the technologies in the course of their daily activities.

Despite the challenges encountered, the methodology, that is, the mixed method, has proven a success in postgraduate research across all disciplines and will still be recommended for future research in the field of humanities including information science as suggested by Creswell (2014), Giddings (2006) and others.

4.12 Summary

This chapter presented the methodology used in this study. Mackenzie and Knipe (2006) stated that the selection of a research paradigm frequently specifies the motivation, intent as well as

expectations of research. The post-positivist research paradigm was adopted in this study. This paradigm allows for combining both quantitative and qualitative (mixed methods) (Gray 2004; Leedy and Ormrod 2005) upon which this study is based. The study surveyed 114 librarians in the Federal university libraries in South-West Nigeria (UI, OAU, UNILAG, FUNAAB, FUTA, OYE) using the census method. Data was collected through a survey questionnaire and a semi-structured interview schedule.

Besides, the study employed a questionnaire and semi-structured interview (through open-ended questions) to collect quantitative and qualitative data respectively. In order to validate the instrument, the questionnaire was pre-tested on 30 librarians at LAUTECH, EKSU, LASU. SPSS was used to analyse quantitative data, while the thematic content analysis otherwise known as TA (Javadi and Zarea 2016:33) was used to analyse qualitative data. The University of KwaZulu-Natal's ethical policy guideline provided the ethical framework that guided the study from a research ethics point of view. The methodology adopted in the study was evaluated and this helped to highlight the problems encountered in the process of data collection and what could be done better in future research on ICTs and knowledge sharing. The next chapter will analyse and present the data gathered from the research site.

CHAPTER FIVE

PRESENTATION OF FINDINGS

5.1 Introduction

This chapter focuses on analysis and presentation of data on information and communication technology (ICT) skills on knowledge sharing among librarians in South-West Nigeria. The data analysis and presentation are reported based on the constructs in the UTAUT theory adopted for this study which are effort expectancy (EE), performance expectancy (PE), social influence (SI) and facilitating condition (FC). Theories, frameworks and models help researchers to see what lies behind the data and theories connect all "propositional knowledge we have about a topic of interest and offer explanations for why something is the way it is" (Cronin, Coughlan and Smith 2015:5). The aim of analysis and presentation of data in research is to answer and summarise the research questions (Alabi 2016:125; Perron and Gillespie 2015:30). According to Bhattacherjee (2012:23), "data is analysed and interpreted for the purpose of drawing conclusions regarding the research questions of interest".

Grinnell and Unrau (2011:448) acknowledged that analysis of data is aimed at sorting, sifting and organising large number of data obtained during data gathering into a meaningful way that addresses the research problems that have been formerly identified. Onodugo, Ugwuonah and Ebinne (2010) submitted that analysis of data demands the researcher to separate data into various parts so as to acquire answers to research questions as well as to test hypotheses.

The study sought to examine the information and communication technology (ICT) skills on knowledge sharing among librarians in Federal university libraries in South-west Nigeria. The following research questions were addressed according to the theory (UTAUT) (See Chapter 1):

1. What is the level of ICT skills among librarians in federal university libraries in South-West Nigeria?
2. What are the effects of ICT on knowledge sharing among librarians in federal university libraries in South-West Nigeria?
3. What are the methods of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

4. What is the level of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?
5. What are the factors affecting knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

Descriptive statistics (frequency counts, percentages, mean and standard deviation) and inferential statistics (Spearman's Rank Order Correlation Coefficient, and multiple regression analysis) were used to manipulate and summarize numerical data.

The study was carried out in six Federal university libraries in Nigeria namely: Federal University of Agriculture, Abeokuta, Ogun State; Federal University Oye, Oye, Ekiti State; Federal University of Technology, Akure, Ondo State; University of Ibadan, Ibadan, Oyo State; University of Lagos, Lagos State; and Obafemi Awolowo University, Osun State. The data gathered through questionnaires was sorted and coded before analysed using Statistical Package for Social Sciences (SPSS). The data were presented in tables to display the values of the results in numerical form. In most cases, symbolic representations like tables and figures were used where results could not be easily expressed in text. According to Khan (2014), human brains are designed to find visual patterns and graphics in a visual format and these can consequently convey meaning quickly and efficiently. Furthermore, data gathered from the interview schedules was analysed through thematic content analysis.

5.2 Response rate

Response rate can be described as the total number of participants who dully fill and return the survey questionnaire (Alabi 2016:107). According to Johnson and Wislar (2012:1805), response rate is defined as "a common metric use for evaluating survey quality under the premise that a higher response rate will produce findings that are more representative of the population of interest". Response rate of any study is often calculated as the total number of the returned questionnaire divided by the overall questionnaires distributed multiplied by 100.

In this study, 114 librarians participated in the survey. Out of 108 questionnaires administered to librarians, 102 copies of the questionnaire were dully completed and returned, giving a response rate of 94.4%. For the interview schedule (qualitative), all the 6 targeted respondents completed the semi-structured interview, giving a 100% response rate. Tables 5.1 and 5.2 show the response

rates for this study. Fincham (2008:1); Bryman (2012:224) and Johnson and Wislar (2012:1805) submitted that the acceptable response rate for survey should not be less than 60%. Scholars like Babbie and Mouton (2001); Nyema (2014) and Maxfield and Babbie (2015) categorised suitable response rates as 60-69% acceptable; 70-85% very good as well as 85% above as excellent. Therefore, based on the above categorisation of response rate, the response rates obtained for this study were considered suitable.

Table 5.1: Response rates from the survey (n = 102)

Sampled Universities	**Total number of questionnaires administered**	**Total number of questionnaires returned**	**Response rate (%)**
University of Lagos	20	18	90.0
Federal University Oye	4	4	100.0
Federal University of Agriculture Abeokuta	22	20	91.0
University of Ibadan	29	29	100.0
Federal University of Technology Akure	11	11	100.0
Obafemi Awolowo University	22	20	91.0
Total	108	102	94.4

Table 5.2: Response rates from the interviews (n = 6)

Sampled Universities	Number of interview copies administered	Number of interview copies returned	Response rate (%)
University of Lagos	1	1	100.0
Federal University Oye	1	1	100.0
Federal University of Agriculture Abeokuta	1	1	100.0
University of Ibadan	1	1	100.0
Federal University of Technology Akure	1	1	100.0
Obafemi Awolowo University	1	1	100.0
Total	6	6	100.0

5.3 Demographic profile of respondents

The demographic data of the respondents is presented in this section as shown in Table 5.3.

Table 5.3: Demographic profile of the respondents (n =102)

Demographic information		Frequency	Percent (%)
Library Section	Circulation	22	21
	Reference	18	18
	Systems	12	12
	Serials	10	10
	Cataloguing	23	22
	Acquisition / Collection development	13	13
	Others	4	4
	Total	102	100.0
Librarian Rank	Assistant Librarian	8	8
	Librarian II	15	15
	Librarian I	22	22
	Senior Librarian	24	23
	Principal Librarian	23	22
	Deputy University Librarian	10	10
	Total	102	100.0
Gender	Male	46	45
	Female	56	55
	Total	102	100.0
Age	20-24	2	2
	25-30	3	3
	31-35	8	8
	36-40	14	14
	41-45	28	27
	46-50	16	16
	51-55	18	17
	56-60	11	11
	61-65	1	1
	66-70	1	1
	Total	102	100.0
Educational Qualification	Bachelor's Degree	4	4
	Master's Degree	65	64
	PhD	33	32
	Total	102	100.0
Work Experience	1-5	17	17
	6-10	27	26
	11-15	21	21
	16-20	19	19
	21-25	7	7
	26-30	2	2
	31-35	9	8
	Total	102	100.0

Table 5.3 above shows that majority of the respondents 23(22%) were in the cataloguing section of the library, 22(22%) were in circulation section while 10(10%) were working in the serials section of the library. Most of the respondents were senior librarians 24(23%) followed by principal librarians 23(22%), while the least of the respondents 8(8%) were assistant librarians. A large proportion of the respondents 56(55%) were female. Majority of the respondents 28(27%) are within 41-45 age bracket while few 2(2%) of the respondents fall within 20-24 age bracket. Also, the table revealed that a large number 65(64%) of the respondents are masters' holders while only 4(4%) hold bachelor's degree. The majority of the respondents 27(26%) have been working for 6-10 years, 21(21%) confirmed that they have been working for 11-15 years while only 2(2%) have been working for 26-30 years.

In order to determine which of the UTAUT moderating variables influence (personal characteristics) technology adoption and use, a correlation matrix was employed and the result is presented in Table 4 below. A correlation matrix is a table showing correlation coefficients between variables.

Table 5.4: Correlation matrix of Knowledge Sharing and personal characteristics of respondents (n = 102)

	Knowledge sharing	Section	Rank	Gender	Age	Educational Qualification	Work experience
Knowledge sharing	1.000						
Section	.057	1.000					
Rank	.044	.017	1.000				
Gender	-.178	.074	-.027	1.000			
Age	.029	-.011	.693**	.070	1.000		
Educational Qualification	.132	.118	.465**	.114	.429**	1.000	
Work Experience	.018	-.020	.578**	-.054	.546**	.268**	1.000
Mean	37.44	3.48	3.69	1.54	5.46	2.28	3.13
Std Dev.	4.51	1.90	1.46	.50	1.75	.53	1.72
n	102**	102	102	102	102	102	102

Table 5.4 shows that correlation does not exist between the UTAUT moderating variables (Section, Rank, Gender, Age, Educational Qualification and Work Experience) and the dependent variable (knowledge sharing). From the results obtained, the data suggests that only the educational qualification of librarians showed a weak correlation (r = 0.13) while the other demographic variables, gender (r = -.178), work experience (r = 0.01), Age (r = .029), rank (r = 0.04), and section (r = 0.057) all reported non correlation. This indicates that demographic variables do not influence knowledge sharing.

The profile of the respondents who partook in the semi-structured interviews is shown in table 5.5 below.

Table 5.5: Profile of the interviewees (n = 6)

	Institution	**Profile**	**Gender**	**Qualification**	**Respondents Code**
1	University 1	University Librarian	Female	PhD	1
2	University 2	University Librarian	Male	PhD	2
3	University 3	University Librarian	Female	PhD	3
4	University 4	University Librarian	Male	PhD	4
5	University 5	University Librarian	Female	PhD	5
6	University 6	University Librarian	Male	PhD	6

In order to ensure the research ethics and to avoid the identification of the participants, therefore, University of Ibadan will forthwith be referred to as 1, Obafemi Awolowo University as 2, University of Lagos as 3, Federal University of Technology as 4, Federal University of Agriculture as 5 and Federal University Oye Ekiti as 6 in the presentation of the qualitative data as shown in table 5.5.

5.4 Data presentation based on research questions

This section addresses and presents the outcomes of the survey based on the research questions.

5.4.1 Level of ICT skills among librarians in federal university libraries in Southwest Nigeria

The first research question for this study sought to determine the level of ICT skills among librarians in Federal university libraries in Southwest Nigeria. This research question was answered by five elements in the questionnaire (See Appendix 2) which constituted the level of ICT skills variable. These elements were the knowledge of computer system skill, word processing skill, spreadsheets skill (for example Microsoft Excel and Numbers) skill, presentation (Microsoft Power Point and Keynote) and Internet and search skills. The analysis of each skill was presented in the form of charts and tables with each question item represented by their percentages. In order to corroborate the quantitative data obtained through the questionnaire for research question one, questions one and two in the interview schedule were used (See Appendix 4).

The first attempt at determining the level of ICT skills of librarians was the question that aimed at ascertaining the perceived ICT skill level of librarians. The finding is presented in Figure 5.1 below.

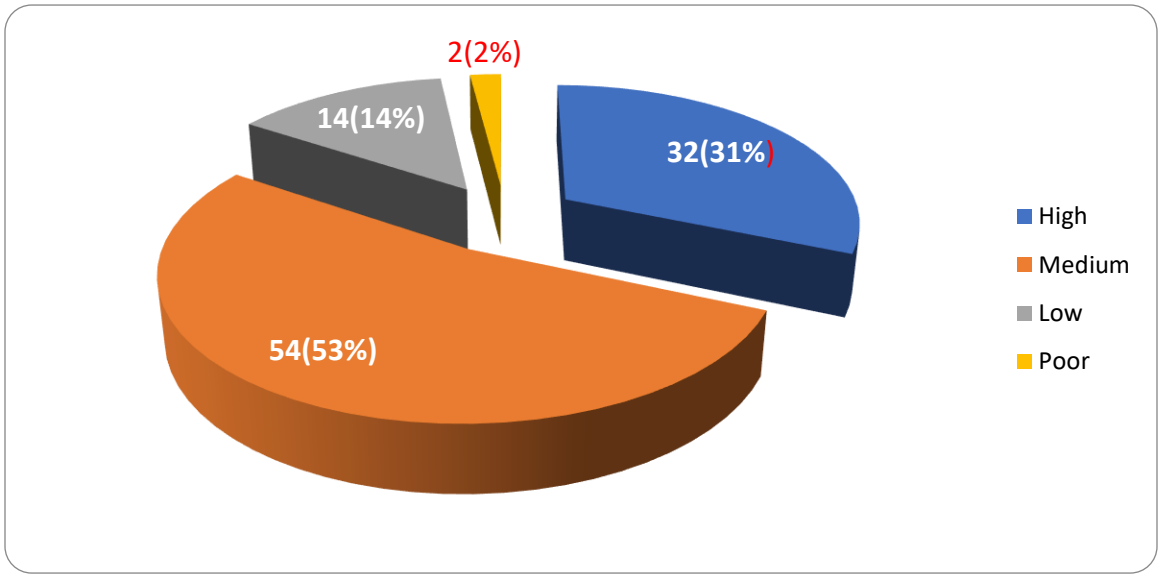


Figure 5.1 Perceived ICT skills level of librarians (n= 102)

Figure 5.1 indicates that majority of the respondents 54(53%) perceived their level of ICT skills to be medium. This is followed by those who stated that their level of ICT skills is high 32(31%), and distantly followed by those who stated their level of ICT skills is low 14(14%). Only 2(2%) of the respondents acknowledged their level of ICT skills is poor.

To ascertain the level of librarians' skill in knowledge of computer, seven items under level of ICT skills in the questionnaire were used. Each question was graded using Likert scale of Excellent, Above Average, Average, Below Average and Very Poor as shown in Table 5.6 below.

Table 5.6: Knowledge of computer system (n =102)

Effort Expectancy	Excellent	Above Average	Average	Below Average	Very Poor	Mean	Std.Dv
I can locate and run a programme (software application) on computer	37(36%)	37(36%)	22(22%)	6(6%)	--	1.97	0.9
I can use CD-ROM based software	44(43%)	39(38%)	17(17%)	2(2%)	--	1.77	0.79
I can use cloud-based software e.g. drop box, e-mail	44(43%)	36(35%)	19(19%)	2(2%)	1(1%)	1.82	0.87
I am able to organize electronic files into folders	54(53%)	37(36%)	9(9%)	2(2%)	--	1.59	0.73
I can search for files on the computer system	58(57%)	32(31%)	12(12%)	--	--	1.54	0.69
I can backup files onto various media types (CD-RW, USB, Hard drive etc.)	59(58%)	28(27%)	14(14%)	1(1%)	--	1.57	0.76
I can connect computer and its peripherals (mouse, keyboard, monitor, iPad etc.)	60(59%)	31(30%)	10(10%)	1(1%)	--	1.52	0.71

Table 5.6 shows that majority of the respondents indicated excellent and above average level in all the question items. A large proportion of the respondents indicated excellent in skills such as ability to connect computer and its peripherals 60(59%),ability to backup files onto various media types 59(58%), ability to search for files on the computer system 58(57%), ability to organize electronic files on the computer system 54(53%), ability to use cloud computing facilities such as drop box,

e-mail etcetera and CD-ROM based software 44(43%) and the ability to locate and run a programme (software application) on computer 37(36%).

There was a considerable number of respondents who demonstrated medium level skills. As for the ability to backup files onto various media types, 28(27%) indicated they have medium level skill, 32(31%) of the respondents equally stated that they have medium level ability to search for files on the computer system, as for the ability to organize electronic files on the computer system, 37(36%) stated they have medium level skills, and medium level skills was also recorded in the ability to use cloud computing facilities such as drop box, e-mail etc 36(35%), ability to use CD-ROM based software 39(38%) and the ability to locate and run a programme (software application) on computer 37(36%). Based on the UTAUT model which identifies EE as influencing technology adoption and use (Venkatesh et al. (2003), this study affirmed that EE positively influence knowledge of computer system among librarians in the study area.

The second step of determining the ICT skills of librarians is to establish the level of their word processing skills. Word processing skills entails the ability to use simple editing features, importing and exporting of texts and images into or from word processed document, insert tables in a document, ability to alter the layout and to position texts and images as well as the ability to create new document templates and divide page layout into columns in a word processed documents such as Microsoft Office Word, Open Word, Word Pad etcetera (Buabeng-Andoh 2012).

Table 5.7: Word processing skills (n = 102)

Effort Expectancy	Excellent	Above Average	Average	Below Average	Very Poor	Mean	Std.Dv
I can use simple editing features e.g. bold, italics, font size etc.	67(66%)	22(22%)	10(10%)	2(2%)	1(1%)	1.51	0.8
I can import text and images into a word-processed document	61(60%)	21(20%)	15(15%)	5(5%)	--	1.65	0.91
I can insert tables in a document	67(66%)	16(16%)	16(16%)	3(2%)	--	1.56	0.86
I have the skill to alter the layout and positioning of text and images	56(55%)	22(21%)	16(16%)	8(8%)	--	1.76	0.99
I can create new document templates	63(62%)	20(19%)	15(15%)	4(4%)	--	1.61	0.88
I can divide page layout into columns	52(51%)	23(22%)	17(17%)	8(8%)	2(2%)	1.87	1.08

Table 5.7 above indicates that a large number of the respondents 67(66%) indicated excellence in the use of simple editing features (italics, font size, bold) as well as ability to insert tables in a document, while 63(62%) indicated they have the ability to create new document template. As far as the ability to import text and images into a word-processed document is concerned, most of the respondents 61(60%) stated their level of skill is excellent while above half 56(55%) shows that they have the skill to alter the layout and positioning of text and images.

The table 5.6 also revealed that 52(51%) of the respondents possessed excellent skills in dividing page layout into columns while 22(21%) and 21(20%) of them had above average skill level to alter the layout and positioning of text and images and import text and images into a word-processed document respectively. As far as the ability to create new document templates is concerned, 15(15%) stated their level of skill is average while only 2(2%) confirmed that their ability to divide page layout into columns is very poor. Venkatesh et al. (2003) submitted that UTAUT model establishes EE construct as affecting technology adoption and use, thus, the present study confirmed that EE positively affects word-processing skills among the librarians.

In addition, respondents were required to indicate their skills level in spreadsheet applications such as Microsoft Excel and numbers. Five constructs were used to achieve this as shown in Table 5.8 below.

Table 5.8: Spreadsheets (for example Microsoft Excel and numbers) (n = 102)

Items	Excellent	Above Average	Average	Below Average	Very Poor	Mean	Std.Dv
I am able to input data in rows and columns	58(57%)	21(20%)	14(14%)	7(7%)	2(2%)	1.76	1.05
I can sort data	46(45%)	27(26%)	16(16%)	11(11%)	2(2%)	1.98	1.11
I can input and use formula for solving problems	33(32%)	25(24%)	22(22%)	16(16%)	6(6%)	2.38	1.25
I am able to produce charts and graphs for data analysis	35(34%)	25(24%)	22(22%)	15(15%)	5(5%)	2.31	1.22
I can print a selected area	53(52%)	28(27%)	15(15%)	6(6%)	--	1.75	0.99

Table 5.8 shows that the majority 58(57%) of the respondents indicated they had the ability to input data in rows and columns in a spread sheet, to sort data 46(45%), input and use formula for solving problems 33(32%), produce charts and graphs for data analysis 35(34%) and print a selected area in a spreadsheet 53(52%). Only few 6(6%) of the respondents had below average or very poor 2(2%) skill levels in the ability to use spreadsheet applications while the rest which constituted about half of the respondents had above and average skill levels in spreadsheet usage. Based on the UTAUT model which identifies EE as influencing technology adoption and use (Venkatesh et al. 2003), this study affirmed that EE has positive influence the competency in spreadsheet among librarians in South-west geo-political zone.

The level of presentation skills of the librarians in the usage of applications such as Microsoft Power Point and Keynote was also sought. Table 5.9 below presented the result.

Table 5.9: Presentation skills (for example Microsoft Power Point and Keynote) (n = 102)

Effort Expectancy	Excellent	Above Average	Average	Below Average	Very Poor	Mean	Std.Dv
I can create a basic presentation package	42(41%)	36(35%)	18(18%)	6(6%)	--	1.88	0.90
I have the skill to modify colours of text, background and lines	45(44%)	28(27%)	21(21%)	7(7%)	1(1%)	1.93	1.01
I can change slide timings, animations and presentation options	41(40%)	32(31%)	23(23%)	6(6%)	--	1.94	0-93
I can produce appropriate handout formats	40(39%)	30(29%)	23(23%)	5(5%)	4(4%)	2.05	1.08

Findings as shown in Table 5.9 reveal that creation of basic presentation package among the respondents was excellent as the majority 45(44%) of the respondents indicated so. There were equally excellent skill levels in the ability to create a basic presentation package 42(41%), ability to change slide timings, animations and presentation options 41(40%) and ability to produce appropriate handouts formats 40(39%).

Table 5.9 also shows that a good number of the respondents equally had above average skill in the usage of presentation application. There were 36(35%) of the respondent who had above average basic presentation skill, 28(27%) with above average level of skill in the ability to modify colours of text, background and lines, 32(31%) who had above average skill in the ability to change slide timings, animations and presentation options and the 30(29%) with the above average skill in the creation of appropriate handout formats. The UTAUT model establishes that the EE construct affects technology adoption and use, hence, this study agreed that EE positively influence presentation skills among the librarians.

The fifth element under level of ICT skill of librarians in the federal universities in Southwest Nigeria were Internet use and search skills.

Table 5.10: Internet use and search skills (n = 102)

Effort Expectancy	Excellent	Above Average	Average	Below Average	Very Poor	Mean	Std.Dv
I can access an Internet site via its website address	67(66%)	25(24%)	9(9%)	1(1%)	--	1.45	0.69
I can use search engines to find information	69(68%)	23(22%)	9(9%)	1(1%)	--	1.44	0.74
I can use social media platforms effectively	58(57%)	35(34%)	7(7%)	2(2%)	--	1.53	0.71
I can use cloud computing e.g. Google drive, drop box etc.	44(43%)	35(34%)	18(18%)	5(5%)	--	1.84	0.89
I can use electronic mail effectively (e.g. Gmail, Yahoomail, Hotmail etc)	71(70%)	25(24%)	6(6%)	--	--	1.36	0.59
I can download files from the internet	71(70%)	23(22%)	8(8%)	--	--	1.38	0.63
I can attach documents or files to e-mails	71(70%)	22(21%)	7(7%)	2(2%)	--	1.41	0.71
I know how to work in a networked environment	56(55%)	35(34%)	10(10%)	1(1%)	--	1.57	0.71

Findings in Table 5.10 shows that majority of the respondents had excellent skill levels in accessing the Internet via website address 67(66%), usage of search engines to find information 69(68%), usage of social media platforms effectively 58(57%), and usage of cloud computing for example Google drive, drop box etc. 44(43%).

There were also excellent skill levels in the usage of electronic mail such as Gmail, Yahoo mail, Hotmail etcetera effectively 71(70%), in the ability to download files from the Internet 71(70%), in the ability to attach documents or files to e-mail 71(70%) and in the expertise to work in a networked environment 56(55%) respectively among librarians in the federal universities in Southwest Nigeria. Going by the EE construct in the UTAUT model propounded by Venkatesh et al. (2003) which stipulates that the construct (EE) influences technology adoption and use, therefore, the present study confirmed that EE has affected internet use and search skills positively among the librarians as was revealed with finding.

To determine the highest level of ICT skills possessed by librarians, the mean scores are presented in Table 5.11.

Table 5.11: Ranking of ICT skills elements

Descriptive Statistics						
	n	Minimum	Maximum	Mean	Std. Deviation	Rank
Internet use and Search skill	102	8.00	26.00	12.0000	4.66502	1
Knowledge of computer system	102	7.00	26.00	11.8235	4.56290	2
Spreadsheet Skill	102	5.00	20.00	10.1863	4.69196	3
Word Processing Skill	102	6.00	24.00	9.9608	5.00875	4
Presentation Skill	102	4.00	16.00	7.8039	3.42397	5

Note: The total number of items considered is 5 at 1 point each. Therefore, the calculated mean is thus; (5-1)/5 = 4.83. Hence, the calculated mean is 4.8 and any mean score below the calculated value is rejected while any mean value above it is accepted.

From table 5.11, it was found that respondents' highest ICT skill is Internet use and search skill with the highest mean of 12.00. This was followed by knowledge of computer system skills with 11.82 mean score closely followed by spreadsheet skills (m=10.18). Word processing skill had mean score of 9.96 while the lowest ICT skill of respondents is presentation skills (m=7.80).

Results from the perceived ICT skill level of librarians in Tables 5.5 to 5.9 indicated that majority of the respondents had high level of ICT skills. This was corroborated by the level of skill demonstrated in each of the ICT skill level elements which also indicated excellent level of skills.

In order to further determine the contribution of the level of ICT skills of the respondents, a regression analysis was conducted using the question that determines the perceived level of ICT skills as the dependent variable (See question 9 of the Appendix 2) and the ICT effort expectancy constructs viz: knowledge of computer system, word processing skills, spreadsheets skills, presentation skills, and Internet use and search skills as independent variables. The finding is presented in table 5.12 below.

Table 5.12: Stepwise Multiple Regression of Effort Expectancy on librarians' ICT skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.344[a]	.118	.072	.69167

Table 5.12 shows that R square = .118, R value adjusted = .072, and overall correlation of all the effort expectancy to perceived ICT skills of librarians yielded an R = .344, while the standard error of the estimate yielded 0.69.

The second step of the analysis was the analysis of variance which was performed on multiple regression which yielded an F-ratio value of 2.571 and was found to be significant at 0.05 levels. Multiple regression is an extension of simple linear regression. It is used particularly when predicting the value of a variable based on the value of two or more other variables. These results suggested that all the independent variables jointly influence the level of ICT skills of librarians.

Table 5.13: Stepwise Multiple Regression on Joint Influence of ICT Elements on level of ICT skills of librarians

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.151	5	1.230	2.571	.032[b]
	Residual	45.928	96	.478		
	Total	52.078	101			

To determine which of the ICT skills elements contributes to the success of ICT skills among librarians in the federal universities southwest Nigeria, a correlation matrix was conducted. The finding is presented in table 5.14.

Table 5.14: Contribution of each element on ICT skills of librarians

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.372	.213		6.444	.000
Knowledge of computer system	.015	.026	.098	.583	.562
Word Process	-.031	.027	-.215	-1.141	.257
Spreadsheet	.027	.028	.178	.956	.342
Presentation	.068	.042	.325	1.621	.108
Internet use and Search skill	-.016	.023	-.105	-.707	.481
Level of Sig. < 0.05					

Findings from Table 5.14 indicates that presentation skills, spreadsheet skills and knowledge of computer system were the only significant contributors to the perceived high level of ICT skill of librarians since the three of them were significant at 0.05 level while word processing and the Internet and search skills were not significant.

This study also gathered qualitative data using the interview schedule. The data from the interview schedule was used to complement the quantitative data. Items 1 and 2 in the interview schedule were used to complement research question one as shown in tables 5.15 and 5.16.

Question 1: How skilful are the librarians in your library in the use of computer technology?

Table 5.15: Interview responses on librarians' computer technology skills (n =6)

Respondent	Response	
Respondent 1	*Librarians are highly skillful in the use of computer technology*	High
Respondent 2	*Very skillful*	High
Respondent 3	*Moderately skillful*	Medium
Respondent 4	*Fairly skillful*	Low
Respondent 5	*Very skillful*	High
Respondent 6	*Some are highly skillful while some are average but none is on the side*	High

Question 2: What kind of training does your library provide to librarians on ICT skills?

Table 5.16: Interview responses on the nature of training on ICT skills for librarians (n =6)

Respondent	Response	
Respondent 1	*Computer application to library services*	In service training Computer Application
Respondent 2	*i. Institution organized capacity training to librarians. The library does give training on ICT skills.* *ii. Conferences and workshops both locally and internationally* *iii. Personal/self development*	In service training Computer Application
Respondent 3	*Hands-on and short term training conferences, workshop*	In service training Computer Application
Respondent 4	*Training on the access and use of databases*	In service training Computer Application
Respondent 5	*In house training from time to time*	In service training Computer Application
Respondent 6	*We send them out for training and sometimes call on the ICT sections to train them*	In service training Computer Application

The interview responses were used to corroborate the questionnaire data. As illustrated in tables 5.15 and 5.16 above, the university librarians of the selected universities confirmed the quantitative data. Four out of the six university librarians interviewed stated their librarians' ICT skills were high while the skills were also continually developed through in-service training such as conferences, workshops, trainings, and personal development. The training, conferences, workshops and personal development was either within the library premises, locally or internationally.

5.4.2 Effects of ICT on knowledge sharing among librarians in federal university libraries in Southwest Nigeria

The second research question of the study sought to ascertain the effects of ICT on knowledge sharing of librarians in federal universities in Southwest Nigeria. A nine items construct in the questionnaire (See Appendix 2) was used to answer the research question. Table 5.16 indicates that each of the items generated a high mean score. This is an indication that majority of the respondents tilted towards agreed and strongly agreed scales in response to the positive statements of ICT on knowledge sharing. Using the Likert scale which comprised of five levels choice, any mean value above the mean score of 3 is considered positive and acceptable to confirm the statements. As a follow up, interview responses were used to corroborate this finding. The questions raised in the interview schedule are: How do you want them to share ICT knowledge? In what ways have ICT improved knowledge sharing in your library? In what capacity has ICT skills enhanced service delivery in your library? and What ICT infrastructures are in place to improve librarians' knowledge sharing? The responses to the interview questions were presented in tables 5.19, to 5.22.

Table 5.17: Perceived effects of ICT on Knowledge Sharing (n =102)

Performance Expectancy	Strongly Disagreed	Disagreed	Neutral	Agreed	Strongly Agreed	Mean	Std.Dv.
Promoting knowledge sharing and learning	11 (11%)	1 (1%)	46 (45%)	44 (43%)	0%	4.19	1.16
Sufficient skills to use social media enhances knowledge sharing	9 (9%)	1 (1%)	2 (2%)	38 (37%)	52 (51%)	4.27	1.13
ICT facilitates new organizational forms for knowledge sharing such as Online knowledge tram	8 (8%)	2 (2%)	2 (2%)	47 (46%)	43 (42%)	4.30	1.16
ICT helps to locate the various elements relevant to the process of knowledge sharing	8 (8%)	2 (2%)	3 (3%)	36 (35%)	53 (52%)	4.33	1.13
ICT enhances knowledge sharing and solves existing knowledge sharing issues	7 (7%)	2(2%)	2 (2%)	34 (33%)	57 (56%)	4.29	1.09
ICT facilitates quick delivery and dissemination of knowledge	8 (8%)	2 (2%)	30(29%)	62 (61%)		4.21	1.13
ICT promotes dissemination of knowledge to wider audiences	9(8%)	1 (1%)	1 (1%)	30 (30%)	61 (60%)	4.12	1.10
ICT promotes timely dissemination of knowledge	9(8%)	1 (1%)	36 (35%)	56 (55%)		4.20	1.15
ICT provides easy access to knowledge by librarians	9 (8%)	2 (3%)	40 (39%)	51 (50%)	0	4.08	1.20

Findings in table 5.17 indicates that the majority of the respondents stated that ICT promotes knowledge sharing 44(43%). Most respondents strongly agreed that having sufficient skills to use social media enhances knowledge sharing 52(51%) and that ICT facilitates new organizational forms for knowledge sharing 43(42%). Finding also showed that ICT promotes dissemination of knowledge to wider audiences 61(60%) while the majority also agreed that ICT facilitates quick delivery and dissemination of knowledge 62(61%). Accordingly, UTAUT model confirmed that using a computer system will improve performance (Venkatesh et al. 2003). The result of this study attested that PE in ICT will facilitate effective knowledge sharing as indicated in above table. Table 5.17 indicated that all items measuring the effect of ICT on knowledge sharing were positive with mean score of 4 and above.

In order to determine the relationship between the effects of ICT Performance Expectancy and Level of Knowledge Sharing (Social Influence), a Spearman's rho was conducted at 0.05 level of significance. Spearman's Rank correlation coefficient is a statistical method used to identify and test the strength of a relationship between two sets of data.

Table 5.18: Relationship between ICT Performance Expectancy and level of Knowledge Sharing (Social Influence)

			Performance Expectancy	Level of Knowledge Sharing
Spearman's rho	Performance Expectancy	Correlation Coefficient	1.000	.271**
		Sig. (2-tailed)	.	.006
		n	102	102
	Level of Knowledge Sharing	Correlation Coefficient	.271**	1.000
		Sig. (2-tailed)	.006	.
		n	102	102

**. Correlation is significant at the 0.05 level (2-tailed).

Table 5.18 indicates that effects of ICT performance expectancy and level of knowledge sharing can fairly cohere since r = 0.27 > 0.05. Thus, there is a weak significant relationship between ICT performance expectancy and knowledge sharing.

This study also gathered qualitative data through the interview schedule. The data from the interview schedule was used to complement the quantitative data. Items 3a, 3b, 4, 5 and 9 in the interview schedule were used to complement research question two.

In response to the interview question 3a, all the 6 library head (university librarians) interviewed agreed that librarians are expected to share their knowledge acquired through training or conferences with other colleagues.

Question 3b: How do you want them to share ICT knowledge?

Table 5.19: Interview responses on sharing of ICT knowledge by librarians (n =6)

Respondent	Response
Respondent 1	• *In-house training and workshop* • *Impartation through personal one on one* • *Interaction in their various sections and units*
Respondent 2	*Use in course of duty*
Respondent 3	*The ICT Skills ideas are exchanged within the staff in form of training and mentoring which in turn improved services delivery*
Respondent 4	*Faculty can access databases from schools to the main library*
Respondent 5	*Since all staff are computer literate they can work online anywhere they are and link each other up on any matter relating to service delivery*
Respondent 6	*No response*

Question 4: In what ways have ICT skills improved knowledge sharing in your library?

Table 5.20: Interview responses on effects of ICT on knowledge sharing (n =6)

Respondent	Response
Respondent 1	• *Easy communication among staff* • *Improved services to end users* • *Enhanced current awareness services, and* • *Selective dissemination of information*
Respondent 2	*Use in course of duty*
Respondent 3	*The ICT Skills ideas are exchanged within the staff in form of training and mentoring which in turn improved services delivery*
Respondent 4	*Faculty can access databases from schools to the main library*
Respondent 5	• *Since all staff are computer literate* • *They can work online anywhere they are and link each other up on any matter relating to service delivery*
Respondent 6	*No response*

Question 5: In what capacity has ICT skills enhanced service delivery in your library?

Table 5.21 Summary of interview responses on how ICT skills enhanced service delivery in the library (n =6)

Respondent	Response
Respondent 1	• *It has led to quick service delivery* • *Part-time services are possible* • *Users get what they want easily* • *Networking among libraries has improved*
Respondent 2	*Very*
Respondent 3	*The ICT skills have greatly enhanced services delivery especially in technical unit. (Cataloguing, Serials and Acquisition)*
Respondent 4	• *Quick information delivery* • *Online registration* • *Reduces the time expended on manual registration*
Respondent 5	*We are able to connect our users online through email, and other library services are delivered online*
Respondent 6	*No response*

Question 9: What ICT infrastructures are in place to improve librarians' knowledge sharing?

Table 5.22: Interview responses on how ICT infrastructures improve librarians' knowledge sharing (n =6)

Respondent	Response
Respondent 1	*Multimedia technology including computers, projectors, telephones and other facilities*
Respondent 2	*All ICT infrastructure- Hardware and Software*
Respondent 3	*Provision of computer, internet connectivity, conducive e-classroom, conducive e-discussion room*
Respondent 4	*Computer sets, Link to internet through radio signal*
Respondent 5	*We made sure that each librarian is entitled to have computer set and should be internet compliant*
Respondent 6	*We have the ICT section that are equipped with good computer projector*

The interviewed respondents also indicated that ICT have effects on knowledge sharing among librarians in Southwest Nigeria. Respondents confirmed that ICT related knowledge is shared among their librarians and that this enhances knowledge sharing.

5.4.3 Methods of Knowledge Sharing among Librarians in the Federal University Libraries in Southwest Nigeria

The third research question for this study sought to know the methods of knowledge sharing among librarians in federal university libraries in Southwest Nigeria. To ascertain the methods of knowledge sharing among librarians in federal universities in Southwest Nigeria, the investigator gathered data through questionnaire (See Appendix 2) and interview (See Appendix 4). The first part sought to determine if the librarians uses traditional methods of knowledge sharing.

Table 5.23: Traditional methods of Knowledge Sharing (n = 102)

Social Influence	Used	Not Used	Mean	Std.Dv
Face-to-face	100(98%)	2(2%)	1.02	0.14
Meetings	98(96%)	4(4%)	1.04	0.29
Storytelling	40(39%)	62(61%)	1.61	0.49
Peer assistance	70(69)	32(31%)	1.31	0.47
Training (seminar/workshop/symposium)	97(95%)	5(5%)	1.05	0.22
Mentorship	82(80%)	20(20%)	1.19	0.39
Brainstorming	77(76%)	25(24%)	1.25	0.43
Community of practice	60(59%)	42(41%)	1.41	0.19

Table 5.23 indicates that majority 100(98%) uses face to face method, 98(96%) use meetings, while trainings such as seminars, workshops and symposia accounted for 97(95%). Based on the

social influence construct of UTAUT, the traditional methods of knowledge sharing among librarians can be facilitated through face-to-face, meetings, training, mentorship etcetera.

Determining the usage of web-based tools for knowledge sharing was also sought. Table 5.24 below shows the findings.

Table 5.24: Technological/web-based tools of Knowledge Sharing (n =102)

Effort and Performance Expectancy	**Used**	**Not Used**	**Mean**	**Std.Dv**
Web conferencing (video/audio conferencing	50(49%)	52(51%)	1.51	0.50
Share net	43(42%)	59(58%)	1.58	0.49
Online discussion group/fora.	64(63%)	38(37%)	1.37	0.49
Electronic white board	46(45%)	56(55%)	1.55	0.50
Instant messaging (WhatsApp, Imo, Instagram, Facebook messenger, Skype, Yahoo messenger)	90(88%)	12(12%)	1.12	0.32
Electronic mail (e-mail)	90(88%)	12(12%)	1.12	0.32
RSS Feed	38(37%)	64(63%)	1.63	0.49
Blog	53(52%)	49(48%)	1.48	0.50
Wikis	40(39%)	62(61%)	1.61	0.49
Social networking site (MySpace, Facebook, Flickr, Twitter,)	91(89%)	11(11%)	1.11	0.31
Nigeria Library Online Forum	76(75%)	26(25%)	1.25	0.44
Research gate/Academia.edu	68(67%)	34(33%)	1.33	0.47
Teleconferencing	38(37%)	64(63%)	1.63	0.49
Social bookmarking and tagging	46(45%)	56(55%)	1.55	0.50

Table 5.24 shows that social networking site is the most widely used among librarians 91(89%). This was closely followed by electronic mail and instant messaging which accounted for 90(88%). About three-quarter of the respondents 76(75%) also uses Nigeria online forum to share knowledge among themselves while more than half 68(67%) of the respondents equally uses ResearchGate/Academia.edu and online discussion group/fora 64(63%).

Table 5.24 also showed that some of the technological platforms for knowledge sharing are not being widely used among librarians. The majority of the respondents have not been using RSS feed and teleconferencing 64(63%), wikis 62(61%), share net 59(58%), electronic whiteboard and social bookmarking and tagging 56(55%) and web conferencing 52(51%). It is indicated from the finding that web-based tool is more popular and mostly used for knowledge sharing among the librarians. This is more evident in the descriptive statistics shown in table 5.25 where web-based tools for knowledge sharing ranked higher than the traditional method. The theory (UTAUT) adopted for this study identifies EE and PE as constructs influencing technology adoption and usage (Venkatesh et al. 2003), this study affirmed that both EE and PE have positive influence on web-based tools for knowledge sharing among librarians in federal university libraries in South-west Nigeria.

Table 5.25: Ranking of traditional and web-based tools for knowledge sharing

Descriptive Statistics

	n	Minimum	Maximum	Mean	Std. Deviation	Rank
Web-based Tools	102	14.00	27.00	19.8333	3.96790	1
Traditional Methods	102	8.00	15.00	9.8824	1.73658	2

Table 5.25 shows that respondents' highest ranked method of knowledge sharing is web-based tools with highest mean of 19.83 while traditional method yielded the mean of 9.88.

Table 5.26: Frequency of knowledge sharing (n = 102)

Social Influence	Daily	Weekly	Monthly	Rarely	Never	Mean	Std.Dv
I always share with other librarians in my library whenever I have learned something new	57(56%)	23(22%)	15(15%)	7(7%)	--	1.73	0.96
I tell the librarians in my library what I know, when they ask me about it	65(64%)	22(21%)	10(10%)	4(4%)	1(1%)	1.57	0.89
I tell the librarians in my library about my skills, when they ask me about it	63(62%)	21(20%)	8(8%)	9(9%)	1(1%)	1.67	1.02
I ask other librarians in my library what they know when I need particular knowledge about something	52(51%)	32(31%)	10(10%)	8(8%)	--	1.75	0.93
Librarians in my library share with me what they know, when I ask them about it	48(47%)	28(27%)	10(10%)	16(16%)	--	1.94	1.09
Librarians in my library share with me about their skills, when I ask them about it	50(49%)	25(24%)	10(10%)	14(14%)	3(3%)	1.97	1.19

Table 5.26 shows a large proportion of the respondents 65(64%) share their knowledge with others when they are asked on daily basis, they also share their skill to others on daily basis when they are asked 63(62%) and always on daily basis. Based on the UTAUT model which establish SI as a construct influencing intention/behaviour to share knowledge, this finding agreed that SI construct affects the frequency of knowledge sharing among librarians positively.

To further determine the relationship that exists between ICT skills and methods of knowledge sharing among librarians in federal universities in Southwest Nigeria, Pearson Product Moment Correlation was conducted.

Table 5.27: Correlations between ICT skills and methods of knowledge sharing

		ICT SKILLS	KNWOLEDGE SHARING
LEVEL OF ICT SKILLS	Pearson Correlation	1	.260**
	Sig. (2-tailed)		.008
	n	102	102
METHODS OF KNWOLEDGE SHARING	Pearson Correlation	.260**	1
	Sig. (2-tailed)	.008	
	n	102	102

**. Correlation is significant at the 0.05 level (2-tailed).

Table 5.27 shows that the value of PPMC r=0.26 which is higher than the critical value of 0.05 indicates there is significant relationship though weak between level of ICT skills and knowledge sharing.

This study also gathered qualitative data using the interview schedule. The data from the interview schedule was used to complement the quantitative data. Items 7 and 8 in the interview schedule were used to complement research question three as shown in tables 5.28 and 5.29.

Question 7: What methods do librarians use to share knowledge in your library?

Table 5.28: Interview responses on methods used for knowledge sharing (n =6)

Respondent	Response
Respondent 1	*Paper presentation at in-house training and workshop; Interpersonal interaction; Report writing*
Respondent 2	*Workshops and Seminars*
Respondent 3	*Face-to-face discussion*
Respondent 4	*Direct contact; Email; WhatsApp*
Respondent 5	*Through face-to-face; Through seminar and conference organized in-house; By coauthoring*
Respondent 6	*Individual training*

Question 8: How effective are this/these methods in knowledge sharing?

Table 5.29: Interview responses on effectiveness of knowledge sharing methods (n =6)

Respondent	Response
Respondent 1	*Highly effective as librarians are kept abreast of current developments in the profession*
Respondent 2	*Very effective*
Respondent 3	*Very effective*
Respondent 4	*Very effective*
Respondent 5	*Very effective*
Respondent 6	*No response*

As shown in tables 5.28 and 5.29, librarians in the Federal University libraries in Southwest Nigeria use both traditional and technological means of knowledge sharing among themselves.

One University Librarian (respondent 1) stated that "*Highly effective as librarians are kept abreast of current developments in the profession"*.

5.4.4 Level of knowledge sharing among librarians in the Federal Universities in Southwest Nigeria

The fourth research question for this study examined the level of knowledge sharing among librarians in the Federal Universities in Southwest Nigeria. In order to determine the level of knowledge sharing of librarians, ten items in the questionnaire answered this research question (See Appendix 2). In addition, the responses to questions 6 and 10 of the interview schedule (See Appendix 4) were used to corroborate the quantitative information obtained through questionnaire. The result of level of knowledge sharing among librarians is presented in table 5.30.

Table 5.30: Level of knowledge sharing among librarians (n =102)

Social Influence	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	Std Dev
I'm afraid to lose influence and recognition when sharing knowledge	6(6%)	6(6%)	5(5%)	22(22%)	63(61%)	1.73	1.17
I perform more effective when I share what I know	42(41%)	50(49%)	4(4%)	5(5%)	1 (1%)	4.25	0.83
Whenever I have learned something new, I tell other librarians in my library	31(30%)	60(59%)	9(9%)	1 (1%)	1 (1%)	4.17	0.71
I tell the librarians in my library what I know, when they ask me about it	40(39%)	53 (52%)	2 (2%)	3 (3%)	4 (4%)	4.2	0.9
I tell the librarians in my library about my skills, when they ask me about it	39(38%)	54(53%)	2 (2%)	3 (3%)	4 (4%)	4.19	0.92
I ask other librarians in my library what they know when I need particular knowledge about something	0 (0%)	26(26%)	71(69%)	3 (3%)	2 (2%)	4.17	0.66
Librarians in my library tell me what they know, when I ask them about it	20(20%)	71(70%)	7(6%)	2 (2%)	2 (2%)	4.03	0.72
Librarians in my library tell me about their skills, when I ask them about it	18(18%)	69(68%)	10(10%)	2 (2%)	3 (3%)	3.95	0.79
I keep important information to myself	12(12%)	19(18%)	7(7%)	22(27%)	42(41%)	2.38	1.47
It is important that librarians are interested in one another's knowledge	0 (0%)	49 (48%)	48(47%)	3 (3%)	2 (2%)	4.4	0.73

As far as the level of knowledge sharing among librarians was concerned, Table 5.30 shows that 92(90%) of the respondents indicated that they perform more effective when they share what they know while just 6(6%) disagreed. Likewise, 93 (91%) of the respondents agreed that they tell the librarians in their libraries what they know, whenever they are asked about it, while only 7(7%) disagreed. It could be inferred from the findings in Table 5.30 that the average means of each item, except two, were above the set minimum range of 3 points. This is an indication that the level of information sharing among librarians in federal university libraries in Southwest Nigeria was high. The UTAUT model establishes SI as a construct determining intention/behaviour to share knowledge, which was further confirmed by this study.

The data from the interview schedule was also used to complement the quantitative data. Items 6 and 10 in the interview schedule were used to complement research question four as shown in tables 5.31 and 5.32.

Question 6: What are the reward incentives available for knowledge sharing in your library?

Table 5.31: Interview responses on reward incentives for knowledge sharing (n =6)

Respondent	Response
Respondent 1	*Further training through sponsorship to conferences and workshops*
Respondent 2	*Workshop and seminar*
Respondent 3	*No reward incentive*
Respondent 4	*Nil*
Respondent 5	*We celebrate knowledge sharing*
Respondent 6	*Non for now*

Question 10: Does your library have a policy for knowledge sharing?

Table 5.32: Interview responses on available policy for knowledge sharing (n =6)

Respondent	Response
Respondent 1	*Yes, it is mandatory to write reports of conferences, trainings and workshops offered by librarians*
Respondent 2	*A library is a public and open access institution. Freedom of access and sharing*
Respondent 3	*Not yet*
Respondent 4	*No*
Respondent 5	*We are in the process of drafting one*
Respondent 6	*Non for now*

Table 5.32 shows that only one library (university 1) had knowledge sharing culture.

5.4.5 Factors affecting knowledge sharing among librarians in federal university libraries in Southwest Nigeria

Research question five was aimed at determining factors affecting knowledge sharing among librarians (See Appendix 2). Results are presented in tables 5.33, 5.34 and 5.35.

Table 5.33: Individual factors (n =102)

Individual Factors (Social Influence)	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	Std Dev
I do not have enough time to focus on sharing knowledge	3(3%)	11(11%)	12(12%)	42(41%)	34(33%)	2.01	1.07
My colleagues do not appreciate the knowledge I wish to share	1(1%)	12(12%)	8(8%)	56(55%)	25(24%)	2.09	0.94
I am not aware of the value and benefit of sharing possessed knowledge to others	1(1%)	6(6%)	5(5%)	53(52%)	37(36%)	1.83	0.85
Sharing my knowledge may reduce or jeopardize others job security.	1(1%)	6(6%)	7(7%)	48(47%)	40(39%)	1.82	0.87
I cannot share my knowledge due to poor communication and interpersonal skills	5(5%)	9(9%)	8(8%)	39(38%)	41(40%)	2.00	1.13
My institution does not give me the incentive to want to share knowledge	4(4%)	14(14%)	12(12%)	38(37%)	34(33%)	2.18	1.16
There are no reward incentives	9(9%)	26(25%)	8(8%)	36(35%)	23(23%)	2.63	1.32
My boss/supervisor does not support my efforts to share my knowledge	5(5%)	13(13%)	10(10%)	50(49%)	24(23%)	2.26	1.11
Reluctance to use technology due to lack of familiarity to knowledge sharing	3(3%)	15(15%)	4(4%)	43(42%)	37(36%)	2.06	1.12

Note: Strongly Agreed and Agreed were aggregated as Agreed

Strongly Disagreed and Disagreed were aggregated as Disagreed

Table 5.33 indicated that the majority 80(78%) disagreed that they do feel reluctant to use technology due to lack of familiarity, while lack of reward did not dissuade the librarians from knowledge sharing 59(58%) while lack of institutional support does not equally sway their minds regarding information sharing 72(70%).

The majority 80(78%) of the respondents equally disagreed that they will not share knowledge because of poor communication and interpersonal skills. 88(86%) of the respondents disagreed that sharing their knowledge may reduce or jeopardise others job security while 90(88%) of the respondents equally disagreed that non-awareness of the value and benefit of sharing knowledge hinders their knowledge sharing. Also, 81(79%) of the respondents disagreed that colleagues do not appreciate the knowledge they wish to share, and time factors does not equally affect knowledge sharing 76(74%). Based on the UTAUT model which identifies SI as a construct affecting intention/behaviour to share knowledge, this finding confirmed that individual factors construct positively influence knowledge sharing of librarians.

Organisational factors hindering knowledge sharing among librarians were also investigated as shown in table 5.34.

Table 5.34: Organisational factors (n =102)

Organizational Factors (Social Influence) Statement	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	Std Dev
Corporate culture in my institution does not provide sufficient support for knowledge sharing practices	8(8%)	15(15%)	13(13%)	44(43%)	22(21%)	2.44	1.21
The physical work environment and layout of work areas restrict effective knowledge sharing practices	2(2%)	20(20%)	8(8%)	45(44%)	27(26%)	2.23	1.12
There is no organizational policy as regard knowledge sharing	13(13%)	34(33%)	13(13%)	27(26%)	15(15%)	3.03	1.34
Lack of formal and informal spaces to share and generate my knowledge	4(4%)	26(25%)	12(12%)	39(38%)	21(21%)	2.54	1.19
Shortage of appropriate infrastructure to support knowledge sharing practices	5(5%)	38(37%)	9(9%)	32(31%)	18(18%)	2.80	1.25
Knowledge flow and communication are restricted into certain directions (e.g. top-down)	11(11%)	33(32%)	5(5%)	36(35%)	17(17%)	2.85	1.33
There are no reward incentives	12(12%)	35(34%)	9(9%)	30(29%)	16(16%)	2.97	1.32
Lack of alternative power supply.	18(18%)	27(26%)	4(4%)	33(32%)	20(20%)	2.90	1.45

Table 5.34 shows that 53(52%) of the total respondents stated that there is the provision of alternative power supply in their organisations, majority 53(52%) disagreed that knowledge flow and communication are restricted into certain directions, the majority 50(49%) disagreed that there was shortage of infrastructure to support knowledge sharing practices and the large proportion of the respondents 60(59%) also disagreed that there is lack of formal and informal spaces to share and generate their knowledge. Findings from the table equally indicates that the majority of the respondents 72(70%) disagreed that the physical work environment and layout of work areas restrict effective knowledge sharing practices while 66(64%) also disagreed that corporate culture in their institution does not provide sufficient support for knowledge sharing practices. It was established in the UTAUT theory that SI construct influences intention/behaviour to share knowledge, therefore, the findings of the present study attested that organisational factors (SI) affect librarians' knowledge sharing.

Technological factors hampering knowledge sharing among librarians were also examined as shown in table 5.35.

Table 5.35: Technological factors (n =102)

Facilitating Condition	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	Std Dev
There is no IT infrastructure in place for sharing knowledge (Internet connectivity, Inadequate computers, LAN, WAN.)	3(3%)	17(17%)	4(4%)	39(38%)	39(38%)	2.08	1.17
The organization does not provide technological know-how share knowledge	4(4%)	22(21%)	8(8%)	40(39%)	28(28%)	2.35	1.21
I do not have sufficient technological skills to share knowledge	4(4%)	13(13%)	3(3%)	47(46%)	35(34%)	2.06	1.12
Lack of technical support and maintenance of integrated IT systems to share knowledge	2(2)	27(27%)	4(4%)	38(37%)	31(30%)	2.23	1.22
Lack of organizational training to use new technology to share knowledge	6(6%)	23(22%)	6(6%)	40(39%)	27(27%)	2.42	1.26
I have enough Internet experience to share my knowledge	30(29%)	43(42%)	6(6%)	15(15%)	8(8%)	3.71	1.26

Table 5.35 indicates that the majority of the respondents 73(71%) have adequate internet experience. About 67(66%) of the respondents disagreed with lack of organisational training to use new technology, while 82(80%) also disagreed with lack of sufficient technological skills to share knowledge and 78(76%) disagreed with lack of IT infrastructure in place for sharing knowledge. The aggregate of the results from table 5.33 to 5.35 showed that the individual, organisational and technological factors affect knowledge sharing among librarians in federal university libraries in Southwest Nigeria positively. According to Venkatesh et al. (2003), FC as construct in UTAUT model play major roles in the adoption and use of technologies. Therefore, facilitating conditions like IT infrastructure, technical know-how/skills, technical support and maintenance are prerequisites to effective knowledge sharing among librarians. In order to ascertain the ranking of the effects of these factors on knowledge sharing, a descriptive analysis was conducted; the result is presented in table 5.36 below.

Table 5.36 Ranking of the factors affecting knowledge sharing (n= 102)

Descriptive Statistics

	n	Minimum	Maximum	Mean	Std. Deviation	Rank
Organizational Factors	102	8.00	37.00	21.8039	7.98146	1
Individual Factors	102	9.00	42.00	18.9706	7.18008	2
Technological Factors	102	6.00	25.00	14.9412	5.13544	3
Valid n (listwise)	102					

Table 5.36 shows that respondents' highest ranked factor that affects knowledge sharing is organisational factors with highest mean of 21.8 while individual factor yielded the mean of 18.97 and technological factors yielded 14.94. The implication of this is that organisational factors should be focused in order to further have the issues surrounding it improved.

5.5 Suggestions on how knowledge can be better shared among librarians

A question on suggestions on how knowledge can be better shared among librarians was asked in the interview schedule (See Appendix 4). Their responses are presented in tables 5.37 and 5.38 below.

Table 5.37: Suggestions on how knowledge can be better shared (n = 102)

Statement	Strongly Disagreed	Disagreed	Neutral	Agreed	Strongly Agreed
Promoting knowledge sharing and learning	11 (11%)	1 (1%)	46 (45%)	44 (43%)	0%
Sufficient skills to use social media enhances knowledge sharing	9 (9%)	1 (1%)	2 (2%)	38 (37%)	52 (51%)
ICT facilitates new organizational forms for knowledge sharing such as Online knowledge tram	8 (8%)	2 (2%)	2 (2%)	47 (46%)	43 (42%)
ICT helps to locate the various elements relevant to the process of knowledge sharing	8 (8%)	2 (2%)	3 (3%)	36 (35%)	53 (52%)
ICT enhances knowledge sharing and solves existing knowledge sharing issues	7 (7%)	2 (2%)	2 (2%)	34 (33%)	57 (56%)
ICT facilitates quick delivery and dissemination of knowledge	8 (8%)	2 (2%)	30 (29%)	62 (61%)	0%
ICT promotes dissemination of knowledge to wider audiences	9 (9%)	1 (1%)	1 (1%)	30 (29%)	61 (60%)
ICT promotes timely dissemination of knowledge	9 (9%)	1 (1%)	36 (35%)	56 (55%)	0%
ICT provides easy access to knowledge by librarians	9 (9%)	2 (2%)	40 (39%)	51 (50%)	0%

Table 5.37 shows that the majority 90(88%) of the respondents were of the opinion that sufficient skills would enhance knowledge sharing as well as facilitates new organizational forms for knowledge sharing. Also, 91(89%) of the respondents agreed that ICT enhances knowledge sharing and solves existing knowledge sharing issues, while 62(61%) agreed that ICT facilitates quick delivery and dissemination of knowledge. This finding was further corroborated with the interview schedule as shown in table 5.38.

Question: Please provide any suggestions on how knowledge can be better shared among librarians so as to enhance team work and job productivity?

Table 5.38: Interview responses on suggestions for knowledge sharing in the library

Respondent	Response
Respondent 1	*It should be made compulsory for librarian to give seminar on their activities periodically*
Respondent 2	*Networking and consortium*
Respondent 3	*Knowledge should not be hoarded by any librarian; Librarians should endeavour to use social media to disseminate information among themselves*
Respondent 4	*Improve access to the internet; Interconnectivity*
Respondent 5	*Librarians should see themselves as one team out to achieve success*
Respondent 6	*No answer*

University 1 acknowledged that the library has a policy statement on knowledge sharing which stipulates that *librarians must share their knowledge on timely basis through seminar regarding the activities in their various units* while university 2 suggested *collaboration through networking and consortium* as indicated in table 5.38.

5.6 Summary

This chapter presented the findings based on the research questions. The findings revealed various level of ICT skills as well as knowledge sharing intentions among librarians in university libraries in Nigeria.

The findings showed that librarians perceived their level of ICT skills to be moderate. The findings also indicated that knowledge of computers generally among librarians in federal universities in Southwest Nigeria is encouraging. The librarians in the studied universities submitted that their ICT affects knowledge and information sharing positively. Traditional methods like face-to-face (98%) method was the mostly utilized means to share knowledge while web-based tools like social network site (89%) were also recorded as the method used for knowledge sharing among the

librarians. The librarians confirmed that they share knowledge with colleagues on daily basis. Also, the level of knowledge sharing among librarians in the selected federal universities was high although sharing of important knowledge as well as phobia for losing recognition when they share information are still challenges. Organisational factors were the highest ranked factor militating against knowledge sharing among librarians in the federal universities studied.

It was also reported in the analysis that all the four constructs (EE, PE, SI, FC) of UTAUT positively influence knowledge sharing activities amongst the librarians in the sampled federal university libraries. Furthermore, moderating variables such as gender, work experience, age, rank and section showed non correlation with knowledge sharing, while educational qualification was the only moderating variable with weak correlation to knowledge sharing activities. Organisational factors was ranked highest factor that affect knowledge sharing among the librarians.

The analysis also revealed that ICT effort expectancy and perceived ICT skills of librarians have a relational influence. Equally, effects of ICT Performance Expectancy and Level of Knowledge Sharing (Social Influence) is significant but low. The next chapter will focus on discussion of findings.

CHAPTER SIX

INTERPRETATION AND DISCUSSION OF FINDINGS

6.1 Introduction

The focus of this chapter is to interpret and discuss the findings that were analysed and presented in Chapter Five. Discussion of findings accounts for main results as well as interpreting and integrating their meaning into other research (Strangor 2015:312). Maiga (2017:138) noted that the discussion chapter places more emphasis on what is new and germane about a finding. Discussion of findings includes expounding and organising the meaning of results collected from questionnaire and interview schedule (Fain 2013:272). Scholars such as LoBiondo-Wood and Haber (2014); Krysik and Finn (2013) and Hanneman, Kposowa and Riddle (2013) submitted that the discussion chapter summarises the findings of a study and considers their implication and significance to the entire society. Discussion of findings in this chapter is arranged in accordance to the research questions. The following research questions were addressed according to the theory (UTAUT):

1. What is the level of ICT skill among librarians in federal university libraries in South-West Nigeria?

2. What are the effects of ICT on knowledge sharing among librarians in federal university libraries in South-West Nigeria?

3. What are the methods of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

4. What is the level of knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

5. What are the factors affecting knowledge sharing among librarians in the federal university libraries in South-West Nigeria?

Blum (2006) cited in Saurombe (2016:178) notes that revisiting the purpose of the study, its objectives and research questions ensures that there is that connecting thread from start to finish with regards to the thesis. The University of Southern California (2013) reiterates the objectives of interpreting and discussing. These include:

1. Reiterating the research problem and stating the major findings;
2. Explaining the meaning of the findings and their importance;
3. Relating the findings to similar studies;
4. Considering alternative explanations of the findings;
5. Admitting the study's limitations; and
6. Making suggestions for further studies.

This study was based on a set of ICT factors that were perceived to influence knowledge sharing. These factors were derived from the objectives of the study and inter alia included:

1. Librarians ICT levels
2. Knowledge of computer systems
3. Office productivity software to support a wide range of tasks (word processing, spreadsheet, presentation, database, email etc.).

This chapter therefore attempts to connect the literature review and the conceptual framework with the findings described in Chapter Four in order to demonstrate how the results confirm or disconfirm the literature on the topic of ICTs and knowledge sharing. Gumbo, Mathipa and Ngulube (2015:192) correctly noted that:

> In the discussion part of your results, you should revisit the literature and conceptual framework that you built in your literature chapter in order to demonstrate how the results confirm or disconfirm the literature.

6.2 Demographic profiles of the respondents

The results in Table 5.3 provided information on demographic profiles of the librarians from the selected federal universities in Nigeria. The majority of the respondents 23(22%) were from the cataloguing section of the library, followed by circulation section with 22(21%). The foregoing showed that there were more librarians in cataloguing section than other sections. This finding

agreed with that of Akande (2010); Quadri and Idowu (2016) and Adegbore (2017) who affirmed that the majority surveyed librarians in South-West were working in the cataloguing department of the library. It can be deduced from the findings that the cataloguing section continues to enjoy the largest number of librarians in the library.

The result also revealed that most of the respondents were senior librarians 24(23%) followed by principal librarians 23(22%), while the least of the respondents 8(8%) were assistant librarians. This implies that the large proportion of the respondents were senior librarians. This result was in consonance with Enakrire and Ocholla's (2017) findings who reported that senior librarians constituted the majority of the respondents in their study. However, in contrast to the report regarding the majority of respondents in this study, studies by Quadri and Idowu (2016) and Ajegbomogun and Diyaolu (2018) found that the majority of the respondents were librarian II, while Okwilagwe and Ogbomo (2012) and Aina, (2014) found that assistant librarians were the main respondents of their study. This then implies that the professional rank of respondents is bound to change from time to time as personnel get promoted.

The findings further found that female respondents constituted the larger population with 56(55%). The implication is that there were more female librarians than male. This finding was similar to the studies by Onifade (2015); Enakrire and Ocholla (2017); Ajegbomogun and Diyaolu (2018) and Ansari et al. (2018) who reported that female librarians constituted the major respondents of their study. In contrast, however, Ugah (2008); Akinnagbe and Baiyeri (2011); Okwilagwe and Ogbomo (2012); Tella (2016); Quadri and Idowu (2016) and Zainab et al. (2018) confirmed that majority of the respondents were male librarians.

A majority of the respondents 28(27%) fall within 41-45 years age bracket, while only 2(2%) fall under the ages of 20-24 years. It can be deduced from the above findings that most of the librarians were between ages 41-45 years old. Studies by Akinnagbe and Baiyeri (2011); Aiyebelehin Ekpoma-Ikenwa and Okpetu (2017); Enakrire and Ocholla (2017) and Zainab et al. (2018) agreed with the findings of this study. On the other hand, a study by Onifade (2015) found that a larger number 91(25%) of librarians who participated in the study were within the ages of 31-35 years, while Oyedapo and Ojo (2013) found that the majority of the librarians 38(45.8%) in their study were within 21-30 years age range. This then implies that a large proportion of the respondents fell within the middle age (41-45 years).

A large proportion 65(64%) of the respondents were masters' degree holders. In other words, more than half of the librarians possessed masters' degree. This result agreed with that of Ojedokun and Okafor (2015); Onifade (2015); Enakrire and Ocholla (2017); Maiga (2017); Ajegbomogun and Diyaolu (2018); who found that a majority of the librarians hold a masters' degree. In contrast to the report regarding the educational qualification of the respondents in this study, Hoskins (2005) found that librarians at university libraries of KwaZulu-Natal possessed the Bachelor of Library Science Honours degree 21(33.9%), while Aiyebelehin et al. (2017) and Ansari et al. (2018) found in their studies that almost half 35(41.7%) and more than half 75(60%) of the librarians had bachelor's degree. This then implies that many of the librarians hold the masters' degree since the degree can take them to the peak of their professional carrier. Ogunlana et al. (2013) noted that a Masters' degree is the major requirement considered as entry point to be a librarian in the profession.

A majority of the respondents 27(26%) have been working for 6-10 years, followed by 21(21%) with 11-15 years working experience, while only 2(2%) agreed that they have been working for 26-30 years. This finding agreed with that of Enakrire and Ocholla (2017) who reported 37(99.9%) of the librarians have been working between 6-10 years. In contrast, however, Aiyebelehin, Ekpoma-Ikenwa and Okpetu (2017) found that 32(38.1%) of the sampled librarians have spent 11-15 years length of service. A study by Ajegbomogun and Diyaolu (2018) found that 78(69%) of the librarians investigated in South-West Nigeria have 1-10 years' work experience. This means that experience is guaranteed to change yearly since personnel working experiences count every year.

In order to further determine which of the moderating variables (Age, gender, experience and voluntariness of use) of how UTAUT affect knowledge sharing among librarians, a correlational matrix was conducted. It was revealed in Table 5.4 that the educational qualifications of librarians showed a weak correlation ($r = 0.13$) while the other demographic variables such as gender, work experience, age, rank and section all reported non-correlation. This finding was in agreement with that by Ugwu and Ekere (2019) and Syed-Ikhsan and Rowland (2004) who reported that only work experience and educational qualification correlated with knowledge sharing practices of the librarians. Studies by Kasim (2015) and Alabi (2016) also reported that gender showed high correlation with knowledge sharing practices among employees in Malaysia and faculty members in Nigeria. In contrast, Ajiferuke (2003) indicated that age, gender and educational qualification

did not show any significant relationship with knowledge management activities. This was supported by Ezeani et al. (2008) cited in Ugwu and Ekere (2019:360) that educational qualification and experience were not important characteristics influencing knowledge management practices in South-East libraries in Nigeria. Also, Kasim (2015) and Alabi (2016) found that age and work experience were not significant in knowledge sharing practices.

6.3 Librarians ICT skills level

The first research question of the study aimed at determining the level of ICT skills possessed by librarians in Nigerian universities, especially in the Southwest geopolitical zone. The ICT skills were measured by five elements namely knowledge of computer system skill, word processing skill, spreadsheets skill (Microsoft Excel and Numbers) skill, presentation (Microsoft Power Point and Keynote) and Internet and search skills. Subsequent sections, therefore, discuss the level of ICT skills possessed by librarians in the universities surveyed.

6.3.1 Knowledge of computer system skill

Librarians in the university libraries were asked to indicate their perceived ICT skills level in which majority 54(53%) of librarians perceived their level of ICT skills to be medium. This was followed by those who believed that they possessed high level of ICT skills 32(31%), and distantly followed by those who believed their level of ICT skills is low 14(14%). Only 2(2%) of the respondents believed their level of ICT skills is poor. This result indicated that the level of ICT skills of librarians in the federal universities in Southwest Nigeria is positive as majority of them falls between medium and high levels. This result is an indication that librarians in university librarians recognize the importance of ICT skills for professional relevance especially in this Information Age. The results were consistent with previous studies which reported similar findings. For instance, Anyaoku (2012) re-examined computer skills of librarians in Nigeria and reported an improved computer literacy level for librarians when compared to results obtained in previous studies. The study reported computer literacy for the various facets of computer and software use ranges from 60% to 98% literacy levels. Also, Akande (2014) in a study of ICT skills of academic library personnel in Oyo state reported that library personnel in these libraries had acquired basic ICT skills for using the Internet, computer and e-mail.

Shidi, Igyuve and Tyonum (2015) investigated ICT skills of library personnel in some universities, polytechnics/monotechnics and colleges of education in Benue state Nigeria. The findings showed variations in skills possessed by the staff mostly in favour of the universities. The study reported that librarians in university libraries possessed most of the skills identified compared to those in the polytechnics/monotechnic and colleges of education. The low level of skills (14%) and poor skills (2%) exhibited by some respondents indicated that not all librarians possessed the required ICT skills. This was also supported by Akande (2014) that some librarians in Oyo State lacked skills for using advanced web-based ICT packages for web page design, troubleshooting and project management. Also, the study did not find any significant relationship between the ICT skills level and methods of ICT skills acquisition ($r= -.165$, $P>0.05$). Anyaoku (2012) also lent her voice to this issue that 'there is still need to ensure that every librarian in the country is equipped with all necessary information and communication technology skills to enable the individual function effectively in the present age'. Anyaoku (2012) further lamented that despite the relevance of information and communication technologies to information service delivery in this dispensation, most research reports ascribe low computer literacy to librarians in Nigeria.

From these present findings however, it is evident that the knowledge of computer among librarians in federal universities in Southwest Nigeria was positive. This further implies that ICT-related tasks and services will be accomplished seamlessly by librarians in federal universities in Southwest Nigeria with their high level of ICT skills. This coincided with Shidi's et al. (2015) conclusion that despite the evidence in the librarians' improved skill level, it is fundamental that every librarian in the country is well-equipped with all required ICT skills to enable them to perform effectively in the modern age.

6.3.2 Word processing skill

From the findings, majority of the respondents indicated excellence 52(51%) and above average 23(22%) skills in the ability to use simple editing features respectively. A large number 63(62%) and about a sixth 15(15%) indicated they have ability to import and export texts and images to and from a word-processed document respectively. As far as the ability to create and insert tables in a document was concerned, most of the respondents 56(55%) claimed their level of skill is excellent while 22% of them had above average skill level. On a general note, findings showed that word processing skill among librarians in federal universities in Southwest Nigeria was high, which

implies that tasks such as typing, editing, saving, retrieving etcetera is easy for them to accomplish. In a recent survey by Oyedokun et al. (2018), the authors described the basic ICT skills possessed by library staff in Kwara State in which the librarians exhibited very high level of proficiency in areas like word processing (96%). This high skill level of participants in Word processing is not far-fetched as the software constitutes one of the most used applications by librarians on a daily basis. Oyedokun et al. (2018) averred that competency in Word processing among librarians was higher than any other basic ICT skills. The findings of Oyedokun et al. (2018) were further supported by Kumar (2013) who showed high level of skills in operating systems, MS-Word and MS-Excel. This was also corroborated by Sankari and Chinnasamy (2014) who indicated that information professionals (librarians inclusive) in India possessed above average ICT competence in software like Greenstone, MS office package as well as Linux. This was also noted by Batool and Ameen (2010) who reported high level of skills in word processing and other computer related hardware.

6.3.3 Spreadsheets (for example, Microsoft Excel and numbers)

As far as the skill level in spreadsheet is concerned, the majority 58(57%) of the respondents indicated they had excellent skill in the ability to input data in rows and columns in a spread sheet, to sort data 46(45%), input and use formula for solving problems 33(32%), produce charts and graphs for data analysis 35(34%) and print a selected area in a spreadsheet 53(52%) as indicated in Table 5.8. This implies that generation of usage statistics, records, documentation of data and data analysis among librarians in the selected federal universities in Southwest Nigeria is increasing. In line with previous findings, Oyedokun et al. (2018) reported that the library staff in the study possessed relatively high skills (84%) in statistical analysis and data processing. Sankari and Chinnasamy (2014) also noted that information professionals particularly librarians in India had above average ICT competence in software packages such as Linux, MS office package as well as Greenstone.

6.3.4 Presentation (for example, Microsoft PowerPoint and Keynote)

Results on the use of presentation packages by librarians showed excellence in the creation of basic presentation package 42(41%), ability to modify colours of text, background and lines 45(44%), ability to change slide timings, animations and presentation options 41(40%) and ability to produce appropriate handouts formats 40(39%). With these available statistics, it is evident that librarians

had great skills in the usage of presentation skills. This was also corroborated by Oyedokun et al. (2018) who reported high level of skill in electronic presentations among librarians in Kwara State. The above findings were supported by Sankari and Chinnasamy (2014) who found that information professionals (including librarians) in India possessed above average ICT competence especially in Greenstone, Linux and MS office package.

6.3.5 Internet use and search skills

With reference to Internet search and use skills among the surveyed librarians, it shows in Table 5.10 that the majority had excellent skill levels in accessing the Internet via website address 67(66%), usage of search engines to find information 69(68%), effective usage of social media platforms 57(58%), and usage of cloud computing such as Google drive, drop box etcetera 44(43%). This result shows that the librarians are good users of Internet and databases. In support of this finding, Oyedokun et al. (2018) discovered that internet use skills which constitute intermediate ICT skills possessed by library staff received 87% while information search skills had 85%. The high level of internet skills displayed by the librarians further confirmed the earlier findings of Adeniji, Adeniji and Oguniyi (2011) which reported that the internet is the most used tools in Nigerian academic libraries.

For further analysis, the average mean values were computed for the various ICT skills with the Internet use and search skill recording the highest mean score of x=12.00 and the presention skills has the least mean score of x=7.80 respectively. The knowledge of computer system skills has (x=11.82), spreadsheet skills (x=10.18) while word processing skill had mean score of 9.96. In order to further determine the level of contribution of the ICT skill level elements to the perceived level of skills of the respondents, a regression analysis was conducted using the perceived level of ICT skills as the dependent variable and the ICT effort expectancy constructs (knowledge of computer system, word processing skills, spreadsheets skills, presentation skills, and Internet use and search skills) as independent variables. The result revealed that all the independent variables jointly influence the level of ICT skills of librarians. As far as these findings were concerned, this is at variance with earlier studies by Adedoyin (2005) showing only 32% ICT competency, Adomi and Anie (2006) showing low computer literacy, while Ramesh Babu, Vinayagamoorthy and Gopalakrishnan (2007) reported low level of proficiency in librarians' ICT skills.

In addition, the interview schedule with the university librarians further corroborated the questionnaire data where academic librarians in the selected university libraries showed high proficiency in ICT. In fact, the first interview respondent in Table 5.15 specifically stated that "*Librarians are highly skillful in the use of computer technology"* which was also supported by other respondents. Earlier studies by Anyaoku (2012) and Osuigwe and Uhegbu (2012) lend credence to this finding. In contrast, Nkamnebe et al. (2015:29) found that professional librarians had weak skill in ICTs. Also, the interviewed librarians stated that the skill level of the librarians was enhanced through in-service training such as conferences, workshops, trainings and personal development. In related studies, Ramesh Babu et al. (2007) identified formal and informal education including self-study and training, IT training, workshop, seminar and conference as the popular means of acquiring ICT skills by librarians which was attested to by Safahieh and Asemi (2010) and Beebe (2004). Kumar and Kaur (2006) further identified other methods as trial and error, as well as guidance from colleagues and friends.

Reiterating the importance of ICT skills to the librarians, Iqbal and Khan (2017) examined the ICT skills of university libraries in Pakistan and reported that 99% of the respondents were highly computer literate, with high proficiency in library automation and digitization. The possession of various ICT skills by the librarians helped them to function effectively in their designated tasks, especially in the area of knowledge sharing as noted by Satapthy and Maharana (2012) who reported high level of ICT skills particularly with knowledge of LibSys automation software (62%). Also, Kumar (2013) showed high level of skills in operating systems, MS-Word and MS-Excel.

From this finding, it could be inferred that the importance of ICT skills to librarians' job roles and knowledge sharing in particular cannot be overemphasized. This assertion was corroborated by researchers like Ramesh Babu et al. (2007) who reported that librarians were competent in the use of technology particularly in operating system (OS); awareness and knowledge of web facilities; technical skills as well as library automation. This was supported by Sankari and Chinnasamy (2014) who noted that information professionals particularly librarians in India had above average ICT competence in software packages such as Linux, MS office package, e-document delivery, Greenstone, etcetera.

The results of this study further confirmed that EE of UTAUT positively influenced knowledge of computer amongst the librarians. This finding was supported by Tavassoli-Farahi, Tajafari and Tahamtan (2014), Kattimani and Naik (2013) and Ramesh Babu et al. (2007) who reported that knowledge of computer such as Internet, Email and search engines were found to facilitate knowledge sharing. Also, Sankari and Chinnasamy (2014) and Batool and Ameen (2010) affirmed that librarians possessed good ICT skills in Windows, presentation, Internet use and search, MS office packages and word processing. However, a study by Gerolimos and Konsta (2008) disputed this as EE such as OS and office, MS word as well as PC usage had negative influence on librarian's knowledge of spreadsheet.

6.4 Effects of ICT on knowledge sharing

The second research question of the study sought to find out the effects of ICT on knowledge sharing of librarians in federal universities in Southwest Nigeria.

The study found that ICT helps librarians to locate the various elements relevant to the process of knowledge sharing (m=4.33), facilitates new organizational forms for knowledge sharing such as Online knowledge tram among librarians (m=4.30), enhances knowledge sharing and solves existing knowledge sharing issues (m=4.29), while sufficient skills to use social media enhances knowledge sharing among librarians (m=4.27). Also, ICT facilitates quick delivery and dissemination of knowledge among librarians (m=4.21), promotes timely dissemination of knowledge among librarians (m=4.20), promotes knowledge sharing and learning among librarians (m=4.19), promotes dissemination of knowledge to wider audiences (m=4.12) and ICT provides easy access to knowledge by librarians (m=4.08) as shown in Table 5.17. The implication of this result is that ICT infrastructure affects librarians in federal universities Southwest Nigeria positively particularly on information sharing. In a related research by Enakrire and Ocholla (2017:5) in which ICTs for knowledge management in academic libraries in Nigeria and South-Africa was investigated, it was reported that the efficacy of ICTs for knowledge management depends largely on the knowledge, skills and experience possessed by the librarians for the services being provided. Enakrire and Ocholla (2017) in the same study clearly identified core areas where ICT and the acquired skills can facilitate knowledge sharing by librarians such as: providing information services to users, generating new knowledge for the support of research and curriculum development processes, offer support for librarians in sending existing knowledge to

colleagues in and outside the library; as well as creating new knowledge and filtering former ones. Enakrire (2015) affirmed competence in ICT usage will facilitate easy access as well as retrieval of information.

This study further identified a weak significant relationship between ICT performance expectancy and knowledge sharing. This implied that librarians are very confident that their level of ICT would greatly impact their knowledge sharing activities in relation to the UTAUT construct of performance expectancy. In line with Osunade, Philips and Ojo (2007) who reported that ICT competence in web sites developing; blogs, audio/video conferencing and mailing list are still not popular amongst universities in Nigeria. Comparatively, Enakrire and Ocholla (2017:5) affirmed that South African university libraries were better furnished in using ICTs particularly for KM (Knowledge Management) practices than their Nigerian counterparts. Furthermore, Enakrire and Ocholla's (2017) study stressed that ICT infrastructure are available in South African university libraries, with limited usage due to poor ICT knowledge, skills, experience, as well as attitudes which emanate from external and internal influences.

The data from the interview schedule was used to complement the quantitative data. This study further showed through the interview that librarians are expected to share their knowledge acquired through training or conferences with other colleagues. This, according to the interview results, could be achieved through in-house training and workshop, personal one-on-one training, interaction in their various sections and units, as well as periodic use in course of duty. In fact, the third respondent in Table 5.19 stated "*the ICT skills ideas are exchanged within the staff in form of training and mentoring which in turn improved services delivery*" while another respondent stated that "*since all staff are computer literate they can work online anywhere they are and link each other up on any matter relating to service delivery*".

University librarians in Southwest Nigeria also acknowledged the various ways in which ICT have improved knowledge sharing among librarians in their respective libraries. These include easy communication among staff, improved services to end users, and enhanced current awareness services (CAS). Akparobore (2015) noted that librarians should own sufficient skills to use technological tools so as to ameliorate knowledge sharing activities in university libraries. Results further showed that ICT infrastructure and skills among librarians have greatly enhanced service delivery in the library including quick information service delivery, possibility to offer part-time

services, users get what they want easily and improved networking among libraries. Furthermore, ICT competence have greatly enhanced services delivery especially in the technical unit (Cataloguing, Serials and Acquisition), reduces the time expended on manual registration, as well as online delivery of library services.

In order to improve the skills of librarians in knowledge sharing, the interviewed respondents stated that certain ICT infrastructures have been put in place such as multimedia technology including computers, projectors, telephones and other facilities, specialised software, internet connectivity, conducive e-classroom, and conducive e-discussion room. Specifically, librarians are furnished with internet-ready computer set each, while a functional ICT unit is put in place. The interviewed respondents also indicated that ICT skills have effects on knowledge sharing among librarians in Southwest Nigeria. Respondents confirmed that ICT skills knowledge is shared among their librarians and that this enhances knowledge sharing. Durojaye and Tiamiyu (2016:12) affirmed that knowledge sharing attitude as well as level of ICT infrastructure and skills usage predict intention to share knowledge.

Generally, the result of this study confirmed that PE in ICT will facilitate effective knowledge sharing. This is in agreement with Majid and Panchapakesan (2015) who found that knowledge sharing improves lessons discussed and strengthens good relationship among colleagues. This was also supported by Chalak, Ziaei and Nafei (2014) who affirmed that 79.2% of the respondents indicated that ICT infrastructure as well as skills had assisted in knowledge sharing. In addition, Anna and Puspitasari (2012) confirmed that PE (competence in ICT) is a prerequisite to sustain knowledge sharing especially in the digital era. This was corroborated by Enakrire (2015) who reported that PE (ICT) eases easy access to knowledge. Olatokun and Elueze (2012) also reported that the degree of technology usage was confirmed to importantly influence knowledge sharing amongst lawyers. This was in tandem with the study by Kasim (2015) on factors to promote knowledge sharing using a validation of UTAUT in Malaysia, where it was revealed that all the independent variables (EE, PE, FC and SI) were positively significant in promoting knowledge sharing practices in a virtual environment. However, the study by Nazim and Mukherjee (2012: para. 13 line 4) was at variance with the above finding as they noted that a low utilisation of PE (ICT tools) for effective knowledge sharing was recorded among respondents in India.

6.5 Methods of knowledge sharing among librarians

The third research question for this study sought to establish the methods of knowledge sharing amongst librarians. The first part sought to determine if the librarians use traditional methods of knowledge sharing.

This study showed that face to face method, meetings and trainings such as seminars, workshops and symposia were utilised by librarians in the university libraries as shown in Table 5.23. Based on the social influence construct of UTAUT, the traditional methods of knowledge sharing amongst the participants can be facilitated through face-to-face, meetings, training, mentorship etcetera. This finding was supported by Kess, Torkko and Phusavat (2007) who confirmed that meetings emerged as the most regular and potent ways of knowledge sharing. Similarly, studies by Opeke and Opele (2014:102); Onifade (2015:91); Awodoyin et al. (2016:12); Abbas (2017:12) and others showed that professional librarians in Nigeria embraced the traditional procedure on knowledge sharing. Awodoyin et al. (2016) for instance reported that librarians in higher institutions in Nigeria essentially share knowledge via traditional means like memo; face to face discussion; notice board and dialogue boards.

As far as the usage of web-based tools for knowledge sharing was concerned, Table 5.24 showed that social networking sites, electronic mail and instant messaging, Nigeria online forum, ResearchGate/Academia.edu and online discussion group/fora were the most widely used by librarians. The implication of these findings is that there is knowledge of usage of these ICT platforms and the technologies to drive them among librarians. However, some of these web-based tools like Sharenet, RSS Feed and teleconferencing were not used by most librarians. In support of this finding, Mesrinejad (2011) indicated that the respondents were aware of web 2.0 tools including podcast and were adequately utilized by them. Also, Quadri and Idowu (2016:38) reported that Facebook, Twitter and Google+ are employed in libraries for SDI to the library clientele. The use of web-based tools for knowledge sharing is rapidly growing among librarians due to development in digital technologies. This observation is noted by Ugwu and Ekere (2019) who showed that most of the respondents 67% share knowledge through Internet/local network, 64% used email while 65% used library dedicated website and 58% used mobile devices.

The results further showed that some of these technological platforms for knowledge sharing were not being widely used among librarians as expected. These include RSS feed and teleconferencing,

wikis, share net, electronic whiteboard and social bookmarking and tagging and web conferencing. Osunade et al. (2007:31) noted then that social networking site such as blogs; wikis; audio/video conferencing etcetera were extremely low in Nigeria. However, it could be deduced from the findings that web-based tools are more popular and mostly used for knowledge sharing among librarians than the traditional methods. Descriptive statistics showed that web-based tools for knowledge sharing ranked higher than the traditional approaches.

Interview data in Tables 5.28 and 5.29 confirmed that librarians shared knowledge using both the traditional and web-based tools including paper presentations during in-house training and workshop, Interpersonal interaction, report writing, Email and WhatsApp platforms. These methods were noted to be "*highly effective as librarians are kept abreast of current developments in the profession*".

The UTAUT theory adopted for this study identifies EE and PE as constructs influencing technology adoption and usage (Venkatesh et al. 2003), and this study confirms that both EE and PE have positive influence on web-based tools of knowledge sharing amongst the respondents. The study also established a significant relationship between the level of ICT skills and methods of knowledge sharing among librarians in federal universities in Southwest Nigeria. The more competent a librarian is using ICT, the easier it becomes sharing knowledge with others through technology. Consequently, a handful of recent studies by Chu, Kwan and Warning (2012); Chan et al. (2013); Chu and Du (2013); Hislop (2013); Akeriwa, Penhorn and Holmner (2014); Mosha (2014); Mosha, Holmner and Penzhorn (2015); Bakare et al. (2015); Fari and Ocholla (2015); Quadri and Idowu (2016); Okite-Amughoro (2017); Kwanya (2017) and Ugwu and Ekere (2019) are in agreement with the present findings that EE and PE constructs of UTAUT have a positive impact on web-based tools for knowledge sharing.

In addition, this study also found that SI as a UTAUT construct influenced the traditional way of knowledge sharing in which 100(98%) used face-to-face, 98(96%) used meetings while 97(95%) shared knowledge through trainings like seminars, workshops and symposia. This finding is confirmed by other studies like Opeke and Opele (2014); Onifade (2015); Awodoyin et al. (2016); Abass (2017) and Ugwu and Ekere (2019) which found that SI (face-to-face, trainings, discussion fora, library display and notice board and oral communication) facilitated knowledge sharing among librarians. Furthermore, a large proportion of the respondents 65(64%) revealed that they

shared their knowledge with other colleagues when they are asked on daily basis, while 63(62%) reported they share their skill to others on daily basis when they are asked. This finding is consistent with that of Lawal et al. (2014) who found that academic staff share resources on daily basis. On the other hand, Kess et al. (2007) submitted that knowledge was shared among respondents on weekly and monthly basis.

6.6 Level of knowledge sharing among librarians

The fourth research question for this study examined the level of knowledge sharing amongst librarians in federal universities in Southwest Nigeria.

As far as the level of knowledge sharing amongst librarians was concerned, the findings in Table 5.30 showed that librarians perform more effectively when they share what they know; and they tell the librarians in their libraries what they know, whenever they are asked about it. This finding indicated a high level of information sharing amongst librarians. Though sharing of important knowledge and phobia for losing recognition when they share information remain challenges.

Findings further showed that certain reward incentives are available for knowledge sharing among librarians in some libraries. These included further training through sponsorship to conferences and workshops, as well as celebrating and recognising individuals who share knowledge. However, there are no such incentives in other libraries for sharing knowledge. The finding was confirmed by Jennex and Olfman (2001) and Malhotra and Galletta (2003) who noted then that there is a positive impact of incentives on sharing. Mathew and Rodrigues (2015) further noted that knowledge management incentives have a strong positive impact on knowledge sharing. It could be argued that the use of incentives will further encourage individuals to share knowledge more frequently. Accordingly, Lyu and Zhang (2017) provided valuable insights for librarians and information professionals in terms of implementing knowledge-management initiatives to encourage knowledge sharing.

This study showed that many libraries do not have a policy for knowledge sharing practices as they regard the library as an open access institution with freedom of access and sharing. It was reported that knowledge sharing practice is a culture in some libraries. One university librarian interviewed stated that *"it is mandatory to write reports of conferences, trainings and workshops offered by librarians"*. Information from the interviews indicated variability on the situation in

each of the universities regarding factors that may aid or influence the level of knowledge sharing amongst librarians in federal universities in Southwest Nigeria. Respondent 1 as shown in Table 5.32 appears as the only institution with a functional policy. In addition, three universities confirmed that there are incentives to motivate knowledge sharing among their staff as shown in Table 5.31. To this end, Ajanaku and Mutula (2018) argued in favour of developing a supportive organisational culture for effective knowledge sharing practices.

The UTAUT model establishes SI as a construct determining intention/behaviour to share knowledge, which was further confirmed by this study. This is corroborated by Oladipupo and AbdulRahman (2018) who reported that SI construct such as attitude, subjective norms and behavioural control significantly influenced intention to share knowledge among non-academic staff in the University of Ibadan, Nigeria. Mesrinejad (2011) also found that level of tools usage and knowledge sharing among academic staff was acceptable and satisfactory. In contrast, Onifade (2015) submitted that the level of knowledge sharing amongst librarians in Nigeria was low, while Ajegbomogun and Diyaolu (2018) reported that library staff were not sharing their knowledge willingly because people do not appreciate it.

6.7 Factors affecting knowledge sharing among librarians

Research question five aimed at determining factors affecting knowledge sharing among librarians.

6.7.1 Individual factors

The study established in Table 5.33 that reluctance to use technology due to lack of familiarity, lack of reward, lack of institutional support, poor communication and interpersonal skills, fear of reducing or jeopardising others job security, and non-awareness of the value and benefit of sharing knowledge never hinders the librarians from knowledge sharing. Based on the UTAUT model which identifies SI as a construct affecting intention/behaviour to share knowledge, this finding confirmed that individual construct positively influences librarian's knowledge sharing. In support of this finding, Tohidinia and Mosakhani (2010:623) discovered that individual factors had high influence on knowledge donation and collection. Kumaresan and Swrooprani (2013:7) reported that almost all the participants (93%) perceived that sharing one's own knowledge would amplify job output, while sharing would aid crucial planning in Qatar community library. Parirokh,

Daneshgar and Fattahi (2008:117) stressed that for successful knowledge sharing activities, factors related to personal curiosity and eagerness of librarians should be considered.

Kasim (2015) also reported that SI construct displayed a positive level of significance with virtual knowledge sharing among respondents in business sector in Malaysia. This result was consistent with findings by Oladipupo and AbdulRahman (2018) who found that SI (attitude, subjective norms and behavioural control) were important to determine knowledge sharing intention in Nigeria. Also, studies by Kumaresan and Swrooprani (2013) and Fullwood and Rowley (2017) supported the above findings. The authors reported that SI construct particularly attitudes and beliefs were more important on knowledge sharing among Qatar community library and UK academics while Ismail and Yusof (2010) noted that a correlation exists between SI individual factors (trust, personality and awareness) and quality of knowledge shared. In contrast however, Okye-Kwakwe and Nor (2011:66) affirmed that individuals are still unenthusiastic to engage in KM procedures principally knowledge sharing.

6.7.2 Organisational factors

Concerning organisational factors hindering knowledge sharing among librarians, results showed in Table 5.34 that there was provision of alternative power supply which greatly enhanced knowledge sharing. This result was contradicted by Olayemi, Umar, Yemi-Peters, Sokari and Haliru (2017) and Mbagwu, Ozioko and Ogueri (2017) who identified poor power supply and others as challenges hindering the use of ICT facilities in the library. This is to say that libraries in Nigeria are beginning to adopt new ways of improving the efficiency of staff and effective service delivery, and thereby investing in alternative power supply like solar system and inverters. However, factors like restricted knowledge flow and communication to certain directions, shortage of infrastructure to support knowledge sharing practices, lack of formal and informal spaces to share and generate their knowledge never affected the librarians' knowledge sharing capacity. Likewise, physical work environment and layout of work areas, and corporate culture in the institutions never restricted the librarians from effective knowledge sharing practices. This finding affirms that the organisational structure as in UTAUT (Social Influence) affects librarians' knowledge sharing. Noor and Salim (2011) reported that SI aided immensely in policy formulation and evolving culture to encourage knowledge sharing activities. Furthermore, Harker (2015) affirmed that SI (organisational culture/management support) emerged as significant factors

determining knowledge sharing between academic staff in South Africa. Mannie, Van Niekerk and Adendorff (2013); Elwany and Mahrous (2016) and Ugwu (2016) found that both organisational structure and learning have positive influence with regards knowledge sharing. In contrast, Nengomasha, Mubuyaeta and Beukes-Amiss (2017) posited that SI variables which includes lack of competence in ICT and technical aid, inadequate IT infrastructure, lack of personnel motivation (reward/incentives), etcetera was noted as barriers to KM practices in Namibia. This was in line with findings by Muchaonyerwa (2015) who submitted that both organisational culture and structure were not commendatory for knowledge sharing.

It could be concluded from the findings that librarians in Nigeria are beginning to recognise the importance of knowledge sharing as a major responsibility. Previous studies by Maiga (2017), Dokhtesmati and Bousari (2013), and Parirokh, Daneshgar and Fattahi (2008) have all reiterated the importance of organisational factors to the effectiveness of knowledge sharing among librarians. Olatokun and Nwafor (2012) confirmed that SI does not have notable influence on employee intention to share knowledge. This was supported by findings by Abdur-Rafiu and Opesade (2015) who noted that SI such attitude, trust and subjective norms were not significant to knowledge sharing intention amongst academics in a sampled polytechnic in Nigeria. In addition, Ogunsola and Lasode (2017) reported that SI was found to be the highest factor hindering knowledge sharing in Nigeria.

6.7.3 Technological factors

The technological factors affecting knowledge sharing among librarians included adequate internet experience, organisational training to use new technology, sufficient technological skills to share knowledge and availability of IT infrastructure. The aggregation of the results showed that individual, organisational and technological factors affect knowledge sharing among librarians in federal university libraries in Southwest Nigeria positively. This coincided with previous findings by Islam and Khan (2014) which reported individual/human factors, organizational factors and technological factors as affecting KS, while Koloniari, Vraimaki and Fassoulis (2016) found organisational culture to be the primary factor influencing knowledge sharing amongst librarians. Biranvand, Seif and Khasseh (2015) found trust as the main factor inhibiting knowledge sharing amongst librarians. According to Venkatesh et al. (2003), FC as construct in UTAUT model plays a major role in the adoption and use of technologies. Therefore, facilitating conditions like IT

infrastructure, technical know-how/skills, technical support and maintenance are prerequisites to effective knowledge sharing among librarians. This assertion was in tandem with findings by Becerra-Fernandes and Sabherwal (2010) who reported that FC like IT infrastructure was found to facilitate knowledge sharing activities. Noor and Salim (2011) confirmed that the availability of sophisticated IT coupled with computer network facilitates knowledge sharing among personnel in workplace. Kasim (2015) also reported that the FC construct positively influences knowledge sharing by employees in Malaysia. In contrast, Azuh and Modebelu (2013) in their study in Nigeria found that lack of ICT infrastructure (FC) negatively affects proper knowledge sharing practices among academic staff.

6.8 Summary

This chapter interpreted and discussed the results that were presented in Chapter Five. The discussion demonstrated that librarians were highly competent in using all the ICT skills elements (Internet use and search skill, Knowledge of computer system, Spreadsheet Skill, Word processing skill, and Presentation skill) effectively in their library with the Internet use and search skill ranking highest with mean score of 11.82. The discussion further confirmed that all the items measuring perceived effects of ICT with regards to knowledge sharing were found positive. Furthermore, both traditional and web-based tools for knowledge sharing were discovered to be suitable for knowledge sharing amongst librarians which was further confirmed by scholars in previous studies. The discussion further noted that knowledge was frequently shared among the librarians particularly on daily basis. Also, individual, organisational and web-based technological factors were found to have positive influence on knowledge sharing.

In addition, the discussion indicated that all the four constructs of UTAUT (EE, PE, SI, FC) had positive influence on knowledge sharing. Educational qualification as moderating variable showed a weak correlation ($r = 0.13$) with the dependent variable (knowledge sharing), while other moderating variables, gender, work experience, age, rank and section reported non-correlation. These findings were supported by Ugwu and Ekere (2019). The next chapter concludes the study as it provides summary of findings as well as recommendations.

CHAPTER SEVEN

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter provides a summary of findings, conclusions as well as recommendations of the study. Marvasti (2004:145) and Dawson (2009:139) postulate that conclusion in a doctoral thesis recapitulates the research findings and discusses implications as well as points to areas of further research. This study examined the information and communication technology skills on knowledge-sharing among librarians in federal university libraries in South-West Nigeria.

The Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) and post-positivist research paradigm were adopted in the study. The mixed methods research approaches were utilized for the study, involving quantitative and qualitative as well as survey research designs. The population of the study consisted of librarians in federal university libraries in South-West Nigeria (See Table 4.2). The quantitative data were gathered through a questionnaire and analysed using SPSS; while the qualitative data, obtained through open-ended interview, were analysed using thematic content analysis.

7.2 Summary of Findings

This section presents summary of the findings. This is organised according to the research questions. The demographic profile of the respondents is the first point of call as respondents were requested to provide demographic data, including their library section as well as librarian's rank and age.

The findings revealed that the majority of the respondents 23(22%) were in the cataloguing section of the library, while only 10(10%) were working in the serials section of the library. Most of the respondents were senior librarians 24(23%), followed by principal librarian 23(22%), while 8(8%) of them were assistant librarians. A large proportion of the respondents 56(55%) were female. The majority of the respondents 28(27%) were within the 41-45 age bracket, while 2(2%) of them fell within the 20-24 age bracket. Also, more than half 65(64%) of the respondents were master's degree holders, while only 4(4%) had bachelor's degree. Most of the respondents 27(26%) had been working for 6-10 years, while others have been working for more than 10 years, as shown in Table 5.3. There was also gender balance among the university librarians interviewed. All the

respondents possessed PhD degree (See Table 5.4). Furthermore, of all the moderating variables, only educational qualification showed a weak correlation with the dependent variable (knowledge sharing). The other demographic variables showed non-correlation.

The first research question examined the ICT skills level among librarians in Federal university libraries in South-West. The findings revealed that more than half of the respondents 54(53%) perceived their level of ICT skills to be medium. A large proportion of the respondents indicated excellent and above-average levels in all the question items (knowledge of computer system; word processing skills; spreadsheet; presentation and Internet use and search skills). Furthermore, Internet use and search skills ranked the highest, with the mean 12.00; followed by knowledge of computer, with the mean score of 11.82, among the ICT skills elements possessed by librarians, as indicated in Table 5.10. Presentation skills, spreadsheet skills and knowledge of computer system were the only significant contributors to the perceived high level of ICT skill of the librarians.

Interviews were conducted to complement the quantitative data. Four out of the six university librarians interviewed stated that their librarians' ICT skills were high. They continued to develop upon the skills through in-service training, like conferences and workshops, as well as personal development (See Tables 5.14 and 5.15). The librarians possessed good ICT skills essential for successful knowledge sharing. This was attested to by EE of UTAUT, that level of ICT skills of librarians positively influences knowledge-sharing practices in the library.

The second research question of this study sought to ascertain the effect of ICT on knowledge sharing of librarians in South-West Nigeria. The findings showed that ICT contributed significantly to knowledge-sharing, as 44(43%) of the librarians stated that ICT skills promote knowledge-sharing, 61(60%) agreed that ICT facilitates dissemination of knowledge to wider audience, 43(42%) opted for new organisational forms for knowledge sharing, while 62(61%) affirmed that ICT enables quick delivery and dissemination of knowledge, as shown in Table 5.16. The mean score above the criterion mean of 3 indicates that all the items measuring the effect of ICT on knowledge sharing were positive. The interviews conducted with the university librarians revealed that ICT have positive effects on knowledge sharing among them. The university librarians affirmed that ICT enhances knowledge sharing among the librarians as well as quick delivery of information. Also, the librarians interviewed acknowledged that there were some ICT

infrastructures in place to facilitate knowledge-sharing, as shown in Tables 5.18 to 5.21. In addition, the findings also affirmed that PE in ICT facilitates effective knowledge-sharing; this was further confirmed by Kasim (2015).

The third research question sought to know the methods of knowledge sharing among librarians in the studied area. The findings revealed that traditional methods were the mostly used methods for sharing knowledge among the librarians, with face-to-face 100(98%), meetings and training (seminar, workshops and symposia) 98(96%), as well as mentorship 82(80%) as the popularly used methods (See Table 5.22). In addition, web-based tools for knowledge-sharing were also noted, with social networking site 91(89%), electronic mail and instant messaging (90(88%)) and Nigeria online forum 76(75%) emerging as the widely used methods (See Table 5.23). Similarly, a large proportion 65(64%) of the librarians share their knowledge with others when they are asked on daily basis, while 63(62%) also share their skills with others on daily basis when they are required to do so, as indicated in Table 5.25. The university librarians interviewed also affirmed that both methods (traditional and web-based) were good means for knowledge-sharing among librarians in their respective university libraries and the methods were very effective (See Tables 5.27 and 5.28). Furthermore, EE, PE and SI of UTAUT were found to have positive influence on both traditional and web-based methods for knowledge sharing.

Research question four examined the level of knowledge sharing amongst librarians in the sampled institutions. The level of information sharing amongst the librarians in the sampled federal university libraries was high, as indicated in Table 5.29. Furthermore, half of the university librarians interviewed affirmed that there are no rewards/incentives for sharing knowledge while others stated that knowledge sharing is celebrated through workshops, conferences and seminars. Moreover, none of the university libraries possessed functional knowledge-sharing policy, except one library (university 1) which had knowledge sharing policy (See Tables 5.30 and 5.31). SI as one of the UTAUT constructs was found to be significant to determine intention/behaviour to share knowledge.

Research question five determined factors affecting knowledge sharing amongst librarians in sampled federal institutions in South-West Nigeria. It was revealed that the majority of the librarians 80(78%) disagreed that they do feel reluctant to use technology due to lack of familiarity. Also, 59(58%) also disagreed that they will not share knowledge due to unavailability of reward,

while 72(70%) of them noted that lack of institutional support does not sway their minds regarding information sharing (See Table 5.32).

Furthermore, 53(52%) of the respondents stated that there is provision of alternative power supply in their organisations, 72(70%) disagreed that the physical work environs as well as layout of work areas restrict effective knowledge sharing practices; while 66(64%) disagreed that corporate culture in their institutions does not provide sufficient support for knowledge sharing practices. Nevertheless, 47(46%) of the respondents agreed that there are no rewards/incentives to enhance knowledge-sharing activities in the selected universities libraries, as shown in Table 5.34.

In addition, the majority of the librarians 73(71%) claimed that they had adequate Internet experience; 67(66%) of them disagreed with lack of organisational training to use new technology for knowledge sharing; while 82(80%) also disagreed with lack of sufficient technological skills to share knowledge; and 78(76%) disagreed with lack of infrastructure in place for sharing knowledge (See Table 5.35). Both SI and FC constructs of UTAUT were found fundamental to effective knowledge-sharing amongst the librarians.

On how knowledge could be shared among librarians, most of the respondents 90(88%) suggested that enough skills would enhance knowledge sharing. Also, 91(89%) of the respondents agreed that ICT enhances knowledge sharing and solves existing knowledge-sharing issues as well as promotes timely dissemination of knowledge; while 62(61%) of them confirmed that ICT facilitates quick delivery of knowledge (See Table 5.36). The university librarians interviewed also mentioned the policy statement and collaboration through networking and consortium, as shown in Table 5.37.

7.3 Conclusion

The study established that the majority of the respondents were in the cataloguing section of the library, while the least were in the serials section. Most of the respondents were senior librarians, followed by principal librarians, while the least of the respondents were assistant librarians. A large proportion of the respondents were female, while the majority of them fell within age bracket of 41-45, and only few fell within the 20-24 age range. A large number of the respondents held masters' degree, while only few held bachelor's degree. Most of the respondents had 6-10 years' working experience and few had 26-30 years' working experience. It can be deduced from the

findings that the cataloguing unit continues to enjoy the largest number of librarians in the libraries and that there are more senior librarians in the libraries studied. However, professional ranks of librarians are bound to change from time to time since library personnel get promoted at regular intervals.

The study also concluded that there are more female than male librarians in the South West geo-political zone of Nigeria. This finding could be premised on the research scope and geographical location where the study was conducted. It can also be inferred from the findings that librarians in the South West geopolitical zone are in their young middle-age (41-45) and more than half of them possess master's degrees since the degree can take them to the peak of their professional carrier. Ogunlana et al. (2013) affirm that a master's degree is the major requirement considered as entry point to be a librarian in the librarianship profession, particularly in Nigeria. It was also found that there was gender balance among the university librarians (library heads) interviewed and all of them (library heads) possessed a PhD degree. This implies that PhD degree is a prerequisite for the position of university librarian in Nigeria.

The findings from the first research question revealed that more than half of the librarians perceived their levels of ICT skills to be medium level and a large number of the librarians equally indicated that they possessed excellent and above-average levels, particularly in knowledge of computer system, word processing skills, spreadsheet, presentation and Internet use and search skills. The study also concluded that presentation skills, spreadsheet skills as well as knowledge of computer system were significant contributors to the perceived high level of ICT skill of the librarians. The university librarian interviewed also corroborated the above assertion by affirming that librarians' in their respective libraries had high ICT skills.

The second research question sought to ascertain the effect of ICT on knowledge sharing of librarians in the studied federal institutions in South West Nigeria. The findings indicated that the ICT infrastructure and related skills acquired by the librarians had positive impact on knowledge sharing. The librarians acknowledged that their ICT has helped to promote knowledge-sharing, facilitate dissemination of knowledge to wider audience, enhance knowledge sharing and solve existing knowledge sharing issues, among others. There was a weak significant relationship between ICTs' performance expectancy and knowledge sharing. The university librarians interviewed also affirmed that ICT have positive effects on librarians' knowledge sharing and that

ICT enhances librarians' knowledge sharing as well as facilitate quick delivery of information with ICT infrastructure in place.

The third research question sought to know the methods of knowledge sharing amongst librarians in the sampled federal institutions in South West Nigeria. The findings indicated that traditional methods were the mostly used methods, such as face-to-face, meetings and training (seminars, workshops and symposia), mentorship, brainstorming, peer assistance, and community of practice, for sharing knowledge. Also, the librarians indicated that technological methods were equally used to share knowledge. These included social networking sites (MySpace, Facebook, Flickr, Twitter), electronic mail, instant messaging (WhatsApp, Imo, Instagram, Facebook Messenger, Skype, Yahoo Messenger), Nigeria Library Online Forum, blogs, online discussion groups/fora. The study also revealed that the librarians shared knowledge frequently, particularly on daily basis. Furthermore, the university librarians interviewed also asserted that both methods, that is, traditional and technological, were good and very effective means of knowledge sharing among the librarians.

The fourth research question for this study examined the level of knowledge sharing amongst librarians in the studied federal institutions Nigeria. It was found that level of knowledge sharing among the librarians in the federal university libraries studied was high. Three of the university librarians interviewed stated that there were no rewards/incentives to motivate librarians to share their knowledge and others noted that knowledge-sharing was only celebrated through conferences, workshops and seminars. In addition, none of the university libraries had functional knowledge sharing policy in place, except one library which had policy to enhance knowledge sharing practices in the library.

The fifth research question determined factors affecting knowledge sharing amongst librarians in the sampled institutions in South West Nigeria. The findings indicated that individual, organisational and technological factors affect knowledge sharing amongst librarians in the federal university libraries in South West Nigeria positively.

The respondents were asked to suggest how knowledge can be better shared among them. The librarians noted that enough skills would assist immensely particularly when sharing knowledge and would facilitate new organizational forms for knowledge sharing. Regarding suggestions on

how knowledge can be better shared in order to enhance teamwork and job productivity, University 1 emphasised that librarians should be made to give seminars on the activities of their unit periodically. University 2 suggested collaboration through networking and consortium. Furthermore, the UTAUT moderating variables may not influence librarians' knowledge sharing. All the UTAUT constructs (EE, PE, SI and FC) were found significant to knowledge sharing practices among the librarians.

The results of the study indicated that knowledge can better be shared among librarians in various ways. For instance, sufficient skills would enhance knowledge sharing as well as facilitate new organizational forms of knowledge-sharing. The respondents further suggested the following:

i. ICT should be used by librarians to enhance knowledge sharing and solve existing knowledge-sharing issues;

ii. ICT should also be used to facilitate quick delivery and dissemination of knowledge;

iii. Librarians should be mandated to give seminars on their activities from time to time. This is to promote knowledge-sharing among them;

iv. Librarians should collaborate with professionals in other libraries through networking and consortium; and

v. The use of social media for information dissemination should be encouraged among librarians.

These and other measures can help to enhance teamwork and job productivity among librarians. Ajanaku and Mutula (2018) recommended that a supportive organisational culture should be embedded into work operations for effective knowledge sharing practices.

7.4 Recommendations

Based on the findings of the study, the following recommendations were made according to the research questions:

Recommendation 1: Level of ICT skills

The study found that there is a high level of ICT skills among librarians in the study area. The study, therefore, recommends that librarians in university libraries and other information centres should continue to update their ICT skills regularly through seminars, workshops, conferences and remedial courses in information technology. This will help them to improve their knowledge sharing skills especially in this knowledge driven society.

Recommendation 2: Effects of ICT on knowledge sharing

The findings showed that ICT had positive effects on librarians' knowledge sharing. As a result, librarians are therefore, encouraged to share knowledge through ICT infrastructure such as personal computer, mobile devices and Internet. This will further promote knowledge sharing among professionals and information users irrespective of their geographical location and time. It will also facilitate new organisational forms of knowledge sharing, hence promoting effective service delivery.

Recommendation 3: Methods of knowledge sharing

The study established that traditional and web-based tools were used by librarians for knowledge sharing. Librarians in university libraries should endeavour to optimally utilise all available methods of knowledge sharing, including traditional methods and emerging web-based tools. Most importantly, web-based tools like RSS Feed, Blogs, and professional-based social networking sites like LinkedIn should be adequately utilised by librarians to share knowledge.

Recommendation 4: **Level of knowledge sharing**

The study discovered a high level of knowledge sharing among the librarians in the sampled institutions, but no rewards/incentives were in place to encourage knowledge-sharing. Library management should consider the use of reward system to enhance knowledge sharing among librarians. Rewards, in the form of incentives, sponsorship, recognition and funding, should be made available for librarians who participate actively in knowledge creation as well as knowledge sharing. This will motivate others to partake in knowledge-sharing activities and, consequently, knowledge transfer among library employees. This is in line with Sandhu, Jain and Ahmad (2011)

who suggested that rewards system can be designed in such a way that inspires individuals to create as well as share knowledge.

Recommendation 5: Factors affecting knowledge sharing

The study established that individual, organisational and technological factors positively affect knowledge sharing among librarians. Library management should consider developing a functional and appropriate knowledge management policy to guide and improve efficient knowledge sharing practices among librarians. The policy should guide towards developing a technological infrastructure, individual intellectual property, training and budgetary allocations. Also, the study recommends that the Librarian Registration Council of Nigeria (LRCN), National Library of Nigeria (NLN) as well as Nigeria Library Association (NLA) should encourage their respective members to ensure that in their library workspaces, there is policy that accommodates emerging technology to enhance knowledge sharing practices among librarians. To this end, Turyasingura (2011) suggests that universities should develop functional policies towards guiding, encouraging, motivating and facilitating knowledge sharing by individuals.

7.5 Originality of the study

Originality is a major yardstick for evaluating doctoral research. The originality of this study is detailed in chapter one. The findings of the study showed that university libraries in South West Nigeria lacked knowledge management policy and this hampered knowledge sharing activities. This study contributes to sensitising stakeholders and library management on the need to develop functional policies that will enhance knowledge sharing practises in Nigerian federal universities.

In addition, the study contributes to the body of knowledge with respect to theoretical development in the light of similar studies conducted in South West Nigeria by (Lawal et al. 2014; Anasi, Akpan and Adedokun 2014; Akparobore 2015; Onifade 2015) to better understand salient issues influencing knowledge sharing. Accordingly, this study was guided by Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003) to further grasp issues relating to ICT skills on knowledge sharing, particularly in developing countries, like Nigeria.

7.6 Implication of the study

7.6.1. Policy implications

This study has far reaching contributions for university libraries in Nigeria, library and information professionals in colleges of education and polytechnic libraries including archives and museum. This study is expected to sensitize the policy makers in university libraries on the relevance of ICT skills to knowledge sharing. The adequate knowledge of ICT skills in relation to knowledge sharing in the university libraries would help library management in formulating policies that would enhance knowledge sharing through ICT applications. It will also facilitate the formulation of policies that will enhance ICT skills acquisition by librarians, thereby fostering service delivery and job productivity.

7.6.2 Practical implications

Based on the findings, this study has contributed immensely to practice in terms of human resources management in the context of South-West Nigeria. The result suggested that ICT skills acquired by librarians will assist in knowledge sharing especially when using intranet, internet, computer, cloud computing, blogs, to share knowledge among colleagues, which in turn will improve team work and enhance job productivity.

Any librarian with high level of ICT skills would exhibit more confidence in sharing knowledge to other librarians which would always enhance their professional competence and consequently promote effective service delivery to meet users' needs. The study further implies that librarians need to engage in self-appraisal of their level of ICT skills in relation to current and emerging technologies in order to refresh their competence as information professionals. For instance, as new technologies emerge, librarians require to update their skills to stay abreast with the new trends.

7.6.3 Theoretical implications

The theoretical framework of this study was based on prior empirical evidences and theoretical gaps identified in the literature. The UTAUT theoretical framework underpinned the present study with the aim of revealing new insight into the theory as extant literature has shown paucity of its usage in relation to ICT and required skills on knowledge sharing among librarians in Nigeria. Therefore, this study has several theoretical contributions in this regard. The present study has provided empirical evidence on the role of ICT skills on knowledge sharing among librarians. The

majority of previous studies such as (Osunade, Philips and Ojo 2007; Lawal et al. 2014; Akparobore 2015; Onifade 2015; Tella 2016) (Franca 2017; Ani, Ngulube and Onyancha 2014; Ani 2013 and Okiki 2013) focused on knowledge sharing among information professionals neglecting ICT skills on knowledge sharing. Taken as a whole, this study has further added empirical evidence to knowledge in the area of ICT skills. It bridges the literature gap found in some current studies by comparing the results of similar findings and building theoretical contexts.

7.7 Limitations and suggestions for further studies

This study examined the ICT skills on knowledge sharing among librarians in federal university libraries in South West Nigeria. Nigeria has six geopolitical zones, namely: North Central, North East, North West, South East, South South and South West. The study was limited to the South West geo-political zone, which is made up of Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo States. It is suggested that similar research should be conducted in other geopolitical zones of Nigeria. The study was also limited to six states that make up South West Nigeria. Further studies could be conducted in another geopolitical zone of Nigeria so as to compare librarians' ICT skills on knowledge sharing with the findings of this study.

REFERENCES

Abbas, K.D. 2017. Knowledge sharing and dissemination among academics in Nigerian universities: patterns and trends. *Journal of Balkan Libraries Union* 5(1): 21-27.

Abdur-Rafiu, M.A. and Opesade, A.O. 2015. Knowledge sharing behaviour of academics in the Polytechnic Ibadan. *Library Philosophy and Practice (e-journal).* Paper 1287. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3449&context=libphilprac Accessed on 06/10/2019.

Abell, A. and Oxbrow, N. 2001. *Competing with knowledge: the information professional in the knowledge management age.* London: Library Association Publishing.

Abidogun, B.A. 2012. *Teachers' experiences of using Yoruba as a medium of instruction in primary classes: implications for learning*. Unpublished thesis (PhD). Department of Early Childhood Education, University of Pretoria.

Adanma, O. 2016. History of university of Lagos aka UNILAG. Available at: https://idonsabi.com/2016/11/02/history-of-university-of-lagos-aka-unilag/ Accessed on 06/06/2017.

Adedoyin, S.O. 2005. Information and communication technology (ICT) literacy among the staff of Nigeria university librarians. *Library Review* 54 (4): 257-266.

Adegbore, A.M. 2017. *Adoption factors and evaluation of use of integrated library management systems in selected Nigerian libraries*. Unpublished thesis (PhD). Department of Library and Information Science, University of Ilorin.

Adegboye, O.A. 2018. *Factors that influence effective knowledge sharing between experts and novices in a South African financial services organisation*. Unpublished dissertation (Masters). Department of Information Science, University of Pretoria.

Adeleke, A.A. and Olorunsola, R. 2010. ICT and library operations more on the online cataloguing and classification tools and techniques in Nigerian libraries. *The Electronic Library* 28(3): 453-462.

Adeleke, O.A. 2017. *An investigation of the extent of automation of public libraries in South-West Nigeria*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Adeniji, M.A., Adeniji, S.E. and Oguniyi, S. 2011. Availability and use of ICT in Olabisi Onabanjo university library. *PNLA Quarterly online Journal* 75(3): 128-136.

Admin, B. 2017. *5 ways to increase knowledge sharing in your organisation*. Bloomfire. (Blog). Available at: https://bloomfire.com/blog/522359-5-ways-to-encourage-knowledge-sharing-within-your-organization/ Accessed on 10/10/2017.

Adomi, E. E. and Anie, S. O. 2006. An assessment of computer literacy skills of professionals in Nigerian university libraries. *Library Technology News* 2: 10-14.

Agarwal, R. and Prasad, J. 1999. Are individual differences germane to the acceptance of new information technologies? *Decision Sciences* 30(2): 361-391.

Agboh, D.K. 2015. Drivers and challenges of ICT adoption by SMES in Accra metropolis, Ghana. *Journal of Technology Research* 6:1-16.

Aharony, N. 2011. Librarian's attitudes towards knowledge management. *College and Research Libraries* 72(1): 111-126.

Ahmed, S. and Rehman, A. 2016. Perceptions and Level of ICT competencies: a survey of librarians at public sector universities in Khyber Pakhtunkhwa, Pakistan. *Pakistan Journal of Information Management and Libraries* 18(1): 1-12.

Aina, R.F. 2014. Awareness, accessibility and use of electronic databases among academic staff of Babcock university business school. *Kuwait Chapter of Arabian Journal of Business and Management Review* 3(6): 40-47.

Aiyebelehin, J.A., Ekpoma-Ikenwe, I.J. and Okpetu, C. 2017. Survey of attitude towards ICTS and use of ICTS for service delivery by librarians in university libraries in Edo State. *Journal of Applied Information Science and Technology* 10(2): 42-48.

Ajanaku, O.J. and Mutula, S. 2018. The relationship between knowledge management and nursing care performance. *South African Journal of Libraries and Information Science* 84(2): 39-51.

Ajegbomogun, O.F. and Diyaolu, O.B. 2018. Availability of library facilities, knowledge sharing as determinants of job performance of library staff in Southwest Nigeria. *Library Philosophy and Practice (e-journal).* Paper 1784. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5026&context=libphilprac Accessed on 18/06/2019.

Ajiferuke, I. 2003. Role of information professionals in knowledge management programme: empirical evidence from Canada. *Information Science Journal* 6: 247-257.

Ajzen I, and Fishbein M. 2000. Attitudes and the attitude-behaviour relation: reasoned and automatic processes. *European Review of Social Psychology* 11(1): 1-33.

Ajzen, and Fishbein, M.I. 1975. *Belief, attitude, intention, and behaviour.* Reading, MA: Addison-Wesley.

Ajzen, I. 1988. *Attitudes, personality, and behaviour.* Chicago: Dorsey Press.

Ajzen, I. 1991. The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes* 50(2): 179-211.

Ajzen, I. 2006. Constructing a TpB questionnaire: conceptual and methodological considerations. Available at: https://pdfs.semanticscholar.org/0574/b20bd58130dd5a961f1a2db10fd1fcbae95d.pdf Accessed on 06/03/2018.

Ajzen, I. 2011. *The theory of planned behaviour: a bibliography*. University of Massachusettes, Department of Psychology, Amherst, MA.

Ajzen, I. and Fishbein, M. 1980. *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Akande, S.O. 2010. *Influence of knowledge and perception on personnel attitude towards preservation of information resources in Federal university libraries in Nigeria.* Unpublished thesis (PhD). Department of Library, Archival and Information Studies, University of Ibadan.

Akande, S.O. 2014. ICT skills of library personnel in a changing digital library environment: a study of academic libraries in Oyo State, Nigeria. *Information Technologist (The)* 11(1): 76-85.

Akbar, F. 2013. *What affects students' acceptance and use of technology? A test of UTAUT in the context of a higher-education institution in Qatar*. Unpublished dissertation (Honors). Carnegie Mellon University, Dietrich College of Humanities and Social Sciences.

Akeriwa, M., Penhorn, C. and Holmner, M. 2014. Using mobile technologies for social media based library services at the University of Development Studies Library, Ghana. *Information Development* 31(3): 284-293.

Akinnagbe O.M. and Baiyeri, K.P. 2011.Training needs analysis of lecturers for information and communication technology (ICT) skills enhancement in faculty of agriculture, University of Nigeria, Nsukka. *African Journal of Agricultural Research* 6(32): 6635-6646.

Akparobore, D. 2015. Knowledge sharing among librarians in university libraries in Nigeria. *Information and Knowledge Management* 5(2): 31-35.

Akporhonor, B.A. and Akpojotor, L.O. 2016. Challenges confronting postgraduate library and information science student in the use of electronic resources in Southern Nigeria. *Library Philosophy and Practice (e-journal) paper 1319.* Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3544&context=libphilprac Accessed on 25/09/2017.

Akporhonor, B.A. and Olise, F.N. 2015. Libraries' use of social media for promoting library and information resources and services in university libraries in South-West Nigeria. *Information and Knowledge Management* 5(6): 1-8.

Akporhonor, B.M. 2005. Library funding in Nigeria: past, present and future. *The Bottom Line: managing library finances*18 (2): 63-70.

Akpotu, C. and Jasmine, T.A. 2013. Transformational leadership and knowledge sharing in ICT based organisation in Nigeria. *International Journal of Business and Social Science* 4(2): 100-106.

Alabi, A.O. 2016. *Adoption and use of electronic instructional media among academics in selected universities in South-West Nigeria*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Alaiad, A. and Zhou, L. 2013. An empirical study of home healthcare robots adoption using UTAUT model. *The Second International Conference on Health Information Technology Advancement (ICHITE)*, Kalamazoo, Michigan, October 17-18.

Alatawi, F.M.H., Dwivedi, Y.K., Williams, M.D. and Rana, N P. 2012. Conceptual model for examining knowledge management system (KMS) adoption in public sector organizations in Saudi Arabia. *Paper presented at the tGOV Workshop '12 (tGOV12), Brunei Universiti, West London.*

AlAwadhi, S. and Morris, A. 2008. The use of the UTAUT model in the adoption of e-government services in Kuwait. In: Sprague, R.H. ed. *Proceedings of the 41st Hawaii International Conference on System Sciences, Waikoloa, Hawaii, Institute of Electrical and Electronics Engineers (IEEE). January 7-10.* pp. 219-219. Available at https://pdfs.semanticscholar.org/e404/cf098c28545acaed44a9e0557acf65491e00.pdf Accessed on 29/05/2017.

Al-Gahtani, S. S., Hubona, G. S., and Wang, J. 2007. Information technology (IT) in Saudi Arabia: culture and the acceptance and use of IT. *Information and Management* 44(8): 681–691.

Alhalhouli, Z.T., Hassan, Z.B. and Der, C.S. 2014. Factors affecting knowledge sharing behaviour among stakeholders in Jordanian hospitals using social networks. *International Journal of Computer and Information Technology* 3(5): 919-928.

Alharbi, S. and Drew, S. 2014. Using the technology acceptance model in understanding academics' behavioural intention to use Learning Management Systems. *International Journal of Advanced Computer Science and Applications* 5: 143-155.

Al-Hawamdeh, S. and Foo, S. 2001. Information professionals in the information age: vital skills and competencies. Paper presented at the International Conference for Library and Information Science Educators in the Asia Pacific Region (ICLISE), Kuala Lumpur, Malaysia, 11-12 June. Available at: https://www.ntu.edu.sg/home/sfoo/publications/2001/01iclise_fmt.pdf Accessed on 19/06/2018.

Al-Qeisi, K., Dennis, C., Alamanos, E. and Jayawardhena, C. 2014. Website design quality and usage behaviour: unified theory of acceptance and use of technology. *Journal of Business Research* 67(11): 2282-2290.

Al-Quesi, K.I. 2009. *Analyzing the use of UTAUT model in explaining an online behaviour: Internet banking adoption.* Unpublished thesis (PhD). Brunel University, College of Business Arts and Social Sciences.

AlRashdi, S. and Srinivas, S. 2015. Assessing knowledge sharing in Sultan Qaboos University (SQU) libraries for enhanced collaboration. Paper presented at the 16th European Conference on Knowledge Management (ECKM): The University of Udine, Italy, 3-4 September.

Al-Shafi, S. and Weerakkody, V. 2009. Understanding citizens' behavioural intention in the adoption of e-government services in the state of Qatar. *Paper presented at the 17th European Conference on Information Systems*. Verona, Italy, June 8-10. Available at: https://pdfs.semanticscholar.org/5cde/577e49726671902182e6d88fa6580d263b45.pdf Accessed 08/03/2017.

Alshehri, M., Drew, S., Alhussain, T. and Alghamdi, R. 2012. The effects of website quality on adoption of e-Government service: an empirical study applying UTAUT model using SEM. *Paper presented at the 23rd Australasian Conference on Information Systems,* Geelong, Australia, December 3-5. Available at. https://arxiv.org/ftp/arxiv/papers/1211/1211.2410.pdf Accessed on 6/03/2018.

Anasi, S.N.I., Akpan, I.J. and Adedokun, T. 2014. Information and communication technologies and knowledge sharing among academic librarians in South-west Nigeria. *Library Review* 63(4/5): 352-369.

Anbari, A.M., 2010. *Survey of Specialized Farsi online social networks and its role in knowledge management and suggest an application model*. Unpublished dissertation (Masters). Department of Library and Information Science, Islamic University Science and Research.

Anderson, J., and Schwager, P. 2004. SME adoption of wireless LAN technology: applying the UTAUT model. In: Information Resources Management Association. eds. *7th Annual Conference Proceeding of the Southern Association for Information System.* Savannah,

Georgia, Association for Information System Electronic Library pp. 39-43. Available at: http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1005&context=sais2004 Accessed on 6/03/2018.

Ani, O.E. 2013. *Accessibility and utilisation of electronic resources information resources for research and its effect on productivity of academic staffs in selected Nigerian universities between 2005 and 2012*. Unpublished thesis (PhD). Department of Information Science, University of South Africa.

Anna, E.V. and Puspitasari, P. 2013. Knowledge sharing in libraries: a case study of knowledge sharing strategies in Indonesian university libraries. *Paper presented at the IFLA WLIC conference* held in Suntec, Singapore, 17-23 August. Available at: http://library.ifla.org/200/1/207-anna-en.pdf Accessed on 13/08/2017.

Ansari, M., Shahdadnezhad, E., Khalidian, M. and Poorsani, M. 2018. The role of social networks in the scientific exchange of librarians: a case study. *Library Philosophy and Practice (e-journal).* Paper 1837. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5123&context=libphilprac Accessed on 17/06/2019.

Ansari, M.N. 2013. ICT skills proficiency of library professionals: a case study of universities in Karachi, Pakistan. *Chinese Librarianship: an International Electronic Journal* 36: 72-84.

Anyaoku, E.N. 2012. Computer skills set of librarians in Nigeria: confronting the stereotype. *Annals of Library and Information Studies (ALIS)* 59(2): 128-134.

Arkkelin, D. 2014. Using SPSS to understand research and data analysis. *Psychology Curricular Materials. Book 1*. Available at: https://scholar.valpo.edu/cgi/viewcontent.cgi?article=1000&context=psych_oer Accessed on 24/4/2017.

Ashikuzzaman, N.M. 2016. Types of libraries (Academic, Public, National and Special), *LIS BD NETWORK* [Online]. Weblog post 28 June. Available at: http://www.lisbdnet.com/types-libraries-academic-public-national-special-library/ Accessed on 17/10/2017.

Asika, N. 1991. *Research methodology in the behavioural sciences.* Lagos: Longman Nigeria Plc.

Aveyard, H. 2014. *Doing a literature review in health and social care: a practical guide* (3rd ed.). London: Open University Press.

Awodoyin, A., Osisanwo, T., Adetoro, N. and Adeyemo, I. 2016. Knowledge sharing behaviour pattern analysis of academic librarians in Nigeria. *Journal of Balkan Libraries Union* 4(1):12-19.

Ayoku, O.A. and Okafor, V.N. 2015. ICT skills acquisition and competencies of librarians: Implications for digital and electronic environment in Nigerian universities libraries. *The Electronic Library* 33(3): 502-523.

Ayoo, P. and Otike, J. 2002. Factors hampering the formulation of a national information policy in Kenya. *Library Review* 51(7): 350-357.

Azuh, O.J. and Modebelu, M.N. 2013. Academic staff challenges to effective utilization of information and communication technology (ICT) in teaching/learning of agriculture education. *Academic Journal of Interdisciplinary Studies* 2(7): 77-83.

Babbie, E. and Mouton, J. 2001. *The practice of social research*. (South African ed). Cape Town: Oxford University Press Southern Africa.

Babbie, E.R. 1998. *The practice of social research*. Belmont, California: Wadsworth Publishing.

Bagozzi, R.P. 2007. The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems 8*(4): 244–254.

Baird, L. and Henderson, J.C. 2001. *The knowledge engine: how to create fast cycles of knowledge-to-performance and performance-to-knowledge*. San Francisco: Berrett-Koehler Publishers.

Bakare, O.D. 2017. The use of social media technologies (SMT) among academic librarians in South-West, Nigeria. *Bulletin of IEEE Technical Committee on Digital Libraries* 13(2): 1-12.

Bakare, O.D. Chiemenem, C.M. Bamigboye, O.B. and Okonedo, S. 2015. Social media tools as medium for knowledge sharing among students and academic staff of Nigerian universities: case study of students' and academic staff of the Federal University of Agriculture, Abeokuta, Ogun State, Nigeria. *New Media and Mass Communication* 35: 35-46.

Balubaid, M.A. 2013. Using Web 2.0 technology to enhance knowledge sharing in an academic department. *Procedia Social and Behavioural Sciences* 102: 406-420.

Bandura, A. 1977a. *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. 1977b. Self-efficacy: towards a unifying theory of behavioural change. *Psychological Review* 84: 191–215.

Bandura, A. 1986. *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs: Prentice Hall.

Bandura, A. 2001. Social cognitive theory: an agentic perspective. *Annual Review of Psychology* 52(1-26): 1-26.

Banerjee, A., and Chaudhury, S. 2010. Statistics without tears: populations and samples. *Industrial Psychiatry Journal* 19(1): 60-65.

Bappah, M.A. 2011. Academic libraries in Nigeria in the 21st century. *Library Philosophy and Practice*. Available at: http://www.webpages.uidaho.edu/~mbolin/abubakar.htm Accessed on 21/09/2017.

Batool, S.H and Ameen, K. 2010. Status of technological competencies: a case study of university librarians. *Library Philosophy and Practice (e-journal).* Paper 466. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1484&context=libphilprac Accessed on 05/08/2017.

Becerra-Fernandes, I. and Sabherwal, R. 2010. *Knowledge management: systems and processes*. New York: M.E Sharpe.

Beebe, M.A. 2004. Impact of the ICT revolution on the African academic landscape. *Paper presented at the CODESRIA Conference on Electronic Publishing and Dissemination* held in Dakar, Senegal, 1-2 September. Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.464.5273&rep=rep1&type=pdf Accessed on 14/06/2019.

BenMessaoud C., Kharrazi H. and MacDorman K. 2011. Facilitators and barriers to adopting robotic-assisted surgery: contextualising the unified theory of acceptance and use of technology. *Public Library of Science* 6(1): 1-11

Bentler, P.M. and Speckart, G. 1979. Models of attitude-bahaviour relations. *Psychological Review* 86: 425-464.

Bernard, H. R. 2012. *Social research methods: qualitative and quantitative approaches* (2nd ed.). Los Angeles: SAGE.

Bhandarkar, P.L. and Wilkinson, T.S. 2010. *Methodology and techniques of social research.* New Delhi: Himalaya Publishing House.

Bhatiasevi, V. 2016. An extended UTAUT model to explain the adoption of mobile banking. *Information Development* 32(4): 799-814.

Bhattacherjee, A. 2012. *Social science research: principles, methods and practices*. (2nd ed.). University of South Florida: Scholar Commons.

Biranvand, A., Seif, M.H. and Khasseh, A.A. 2015. Knowledge sharing among librarians in public libraries of Fars Province, Iran. *Library Philosophy and Practice (e-journal).* 1259. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3380&context=libphilprac Accessed on 16/09/2017.

Birch, A., and Irvine, V. 2009. Preservice teachers' acceptance of ICT integration in the classroom: applying the UTAUT model. *Educational media international* 46(4): 295-315.

Bircham-Connolly, H., Corner, J. and Bowden, S. 2005. An empirical study of the impact of question structure on recipient attitude during knowledge sharing. *Electronic Journal of Knowledge Management* 32(1): 1-10.

Blakie, N. 2010. *Designing social research.* (2nd ed.). Cambridge, England: Polity Press.

Boote, D. N. and Beile, P. 2005. Scholars before researchers: on the centrality of the dissertation literature review in research preparation. *Educational Researcher* 34(6): 3-15.

Boswell, C. and Cannon, S. 2014. *Introduction to nursing research: incorporating evidence- based practice.* Burlington: Jones and Bartlett Learning.

Botha, A., Kourie, D. and Snyman, R. 2008. *Coping with continuous change in the business environment: knowledge management and knowledge management technology*. Oxford: Chandos Publishing.

Brink, H., Van Der Walt, C. and van Rensburg, G. 2012. *Fundamentals of research methodology for healthcare professionals.* (3rd ed.). Cape Town: Juta.

Brown, J.S. and Duguid, P. 1991. Organisational learning and communities of practice: towards a unified view of working, learning, and innovation. *Organisational Science* 2(1): 40-57.

Brown, S., Dennis, A. and Venkatesh, V. 2010. Predicting collaboration technology use: Integrating technology adoption and collaboration research. *Journal of Management Information Systems* 279(2): 9–53.

Brown, S.A. 2008. Household technology adoption use and impacts: past, present and future. *Information Systems Frontiers* 10(4): 397–402.

Bryman, A. 2012. *Social research methods.* (4th ed.). New York: Oxford University Press.

Buabeng-Andoh, C. 2012. An exploration of teachers' skills, perceptions, and practices of ICT in teaching and learning in the Ghanaian second-cycle schools. *Contemporary Educational Technology* 3(1): 36-49.

Burch, T.K. 2003. Demography in a new key: a theory of population theory. *Demographic Research* 9(11): 263-284.

Bussey, J.M., Dormody, T.J. and Van Leeuwen, D. 2000. Some factors predicting the adoption of technology education in New Mexico public schools. *Journal of Technology Education* 12(1): 1-14.

Buztin, S. 2000. *Project child: a decade of success for young children*. Available at: https://thejournal.com/Articles/2000/06/01/Project-Child-A-Decade-of-Success-for-Young-Children.aspx? Accessed on 08/08/2017.

California Emerging Technology Fund. 2007. *ICT digital literacy initiative*. Available at: http://www.cetfund.org/files/cetf_ict_dli.pdf Accessed on 12/10/2019.

Canadian Association of Research Libraries. 2010. *Core competencies for 21st century CARL librarians*. Available at: http://www.carl-abrc.ca/doc/core_comp_profile-e.pdf Accessed on 22/09/2017.

Carson, D., Gilmore, A., Perry, C. and Gronhaug, K. 2001. *Qualitative Marketing Research*. London: SAGE.

Carswell, A.D. and Venkatesh, V. 2002. Learner outcomes in an asynchronous distance education environment. *International Journal of Human-Computer Studies* 56(5): 475-494.

Chalak, A.M., Ziaei, S. and Nafei, R. 2014. A survey of knowledge sharing among the faculty members of Iranian Library and Information Science (LIS) Departments. *Library Philosophy and Practice (e-journal).* Paper 1063. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2631&context=libphilprac Accessed on 16/06/2019.

Chan, R.C.H., Chu, S.K.W., Lee, C.W.Y., Chan, B.K.T. and Leung, C.K. 2013. Knowledge management using social media: a comparative study between blogs and Facebook. *Proceedings of the Association for Information Science* 50(1): 1-9.

Chao, L. 2014. Application of infrastructure as a service in IT education. *American Journal of Information Systems* (2)2: 42-48.

Charband, Y. and Navimipour, N.J. 2016. Online knowledge sharing mechanisms: a systematic review of the state of the art literature and recommendations for future research. *Information Systems Frontier* 18(6): 1131-1151.

Chau, P.Y.K. 1996. An empirical assessment of a modified technology acceptance model. *Journal of Management Information Systems* 13(2): 185–204.

Chawner, B. and Oliver, G. 2013. A survey of New Zealand academic reference librarians: current and future skills and competencies. *Australian Academic and Research Libraries* 44(1): 29-39.

Chen, C.C. 2013. The exploration on network behaviours by using the models of theory of planned behaviour (TPB), technology acceptance model (TAM) and C-TAM-TPB. *African Journal of Business Management* 7(30): 2976-2984.

Chen, C.C., Wu, J. and Crandall, R.E. 2007. Obstacles to the adoption of radio frequency identification technology in the emergency rooms of hospitals. *International Journal of electronic Healthcare* 3: 193-207.

Chen, C.F. and Chao, W.H. 2011. Habitual or reasoned? Using the theory of planned behaviour, technology acceptance model, and habit to examine switching intentions toward public transit. *Transportation Research Part F: Traffic Psychology and Behaviour* 14*(*2): 128-137.

Cheng, M., Ho, J.S. and Lau, P.M. 2009. Knowledge Sharing in Academic institutions: a study of Multimedia University Malaysia. *Electronic Journal of Knowledge Management* 7(3): 313-324.

Chiemeke, S. and Evwiekpaefe, A. 2011. A conceptual framework of a modified unified theory of acceptance and use of technology (UTAUT) model with Nigerian factors in e-commerce adoption. *Educational Research* 2(12): 1719-1726.

Chior, T.T. 2009. *Foundation of research methodology and statistics in education.* Benue: Glossy Graphics Institute.

Chisenga, J. 2006. Information and communication technologies: opportunities and challenges for national and university libraries in Eastern, Central and Southern Africa. *Keynote paper presented at the SCANUL-ECS [Standing Conference of African National and University Libraries of Eastern, Central and Southern] Africa* held in Courtyard Hotel. Dar es Salaam, Tanzania, 9-10 July.

Chisenga, J. and Chande-Mallya, R. 2012. Social media and professional networking: a case of information professionals in the SCECSAL region. *Paper presented at the Twentieth Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL), Nairobi, Kenya, 4-8 June.* Available at http://eprints.rclis.org/18920/1/Justin-and_Rehama_SCECSAL2012_SocialMedia.pdf Accessed on 09/09/2017.

Chu, S.K.W. and Du, H. 2013. Social networking tools for academic libraries. *Journal of Librarianship and Information Science* 45(1): 64-75.

Chu, S.K.W., Kwan, A.C.M. and Warning, P. 2012. Blogging for information management, learning, and social support during internship. *International Forum of Educational Technology and Society* 15(2) 168-178.

Chua, Y.K. and Goh, D.H. 2010. A study of Web 2.0 applications in library websites. *Library and Information Science Research* 32(3): 203-211.

Chuang, M. and Shen, C. 2008. A study on the applications of knowledge-sharing blog concepts to the teaching in elementary school. *Paper presented at the International Conference on Cyberworlds*, held in Hangzhou, China, 22-24 September.

Chukwuemeka, E.E.O. 2002. *Research methods and thesis writing: a multi-disciplinary approach*. Enugu: Hope Rising Venture.

Churchill, G.A. 1996. *Basic Marketing Research*. (3rd Ed.). Fort Worth, TX: The Dryden Press.

Chuttur, M.Y. 2009. Overview of the technology acceptance model: origins, developments and future directions. *Working Papers on Information Systems* 9(37): 9-37.

Click, A. and Petit, J. 2010. Social networking and Web 2.0 in information literacy. *The International Information and Library Review* 42(2): 137–142.

Coakes, E. 2006. Storing and sharing knowledge: Supporting the management of knowledge made explicit in transnational organizations. *The Learning Organization* 13 (6): 579-593.

Cocosila, M., Archer, N. and Yuan, Y. 2009. Early investigation of new information technology acceptance: a perceived risk-motivation model. *Communication of the Association of Information Systems* 2(5): 339-358.

Colley, A. and Comber, C. 2003. Age and gender differences in computer use and attitudes among secondary school students: what has changed? *Educational Research* 45(2): 155 -165.

Collins, K.M.T., Onwuegbuzie, A.J. and Sutton, I.L. 2006. A model incorporating the rationale and purpose for conducting mixed methods research in special education and beyond. *Learning Disabilities: a Contemporary Journal* 4(1): 67–100.

Collison, C. and Parcell, G. 2001. *Learning to fly: Practical lessons from one of the world's leading knowledge companies.* London: Capstone Ltd.

Compeau, D.R. and Higgins, C.A. 1995.Computer self-efficacy: development of a measure and initial test. *MIS Quarterly* 19(2): 189-211.

Compeau, D.R., Higgins, C.A. and Huff, S. 1999. Social cognitive theory and individual reaction to computing technology: a longitudinal study. *MIS Quarterly* 23(2): 145–158.

Connelly, C.E., Kelloway, E.K. 2003. Predictors of employees' perceptions of knowledge sharing culture. *Leadership and Organization Development Journal* 24 (5): 294-301.

Creswell, J. 1994. *Research design: qualitative and quantitative approaches*. Thousand Oaks, Calif.: London: Sage.

Creswell, J. 1998. *Qualitative inquiry and research design: choosing among five traditions*. Thousand Oaks, CA: Sage Publication.

Creswell, J. 2003. *Research design: Qualitative, quantitative and mixed methods approach.* (2nd ed.). Thousand Oaks, CA: SAGE.

Creswell, J.W. 2009. *Research design: qualitative, quantitative and mixed methods approach.* (3rd ed.) Los Angeles: SAGE.

Creswell, J.W. 2014. *Research design: qualitative, quantitative and mixed methods approach*. (4th ed.). London: SAGE.

Creswell, J.W. and Clarke, V.L.P. 2010. *Designing and conducting mixed methods research* (2nd). Thousand Oaks: SAGE.

Creswell. J. W., and Plano-Clark, V. L. 2007. *Designing and conducting mixed methods research.* Thousand Oaks, CA: SAGE.

Cronin, P., Coughlan, M. and Smith, V. 2015. *Understanding nursing and health care research*. Los Angeles, CA: SAGE.

Cropanzano, R., and Mitchell, M.S. 2005. Social exchange theory: An interdisciplinary review. *Journal of Management* 31(6): 874–900.

Crowther, K.G. 2014. Understanding and overcoming information sharing failures. *Journal of Homeland Security and Emergency Management* 11:131-154.

Cryer, P. 2000**.** *The research student's guide to success (*2nd ed.). New York**:** Open University Press.

Damanpour, F. 1996. Organizational complexity and innovation: development and testing multiple contingency models. *Management Science* 42(5):693-716.

Davis, F.D. 1986. *A technology acceptance model for empirically testing new end-user information systems*. Unpublished thesis (PhD). Institute of Technology, Massachusetts Institute of Technology.

Davis, F.D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13(3): 319-340.

Davis, F.D. 1993. User acceptance of information technology: system characteristics, user perceptions and behavioural impacts. *International Journal of Man-machine Studies 38*(3): 475-487.

Davis, F.D. and Venkatesh, V. 1996. A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences* 27: 451–481.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. 1989. User acceptance of computer technology: a comparison of two theoretical models. *Management Science 35*(8): 982-1003.

Dawson, C. 2009. *Introduction to research methods: a practical guide for anyone undertaking a research project.* (4th ed.). Oxford: Springer.

Deb, S. 2014. Information technology, its impact on society and its future. *Advances in Computing* 4(1):25-29.

Deci, E.L. and Ryan, R.M. 1980. The empirical exploration of intrinsic motivational processes. *Advances in Experimental Social Psychology*13: 39-80.

Deci, E.L. and Ryan, R.M. 1985. *Intrinsic Motivation and Self-Determination in Human Be*haviour. New York: Plenum Press.

Deci, E.L. and Ryan, R.M. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55(1): 68-78.

Denscombe, M. 2014. *The good research guide: for small-scale social research projects*. (5th ed.). Maindenhead: Open University Press.

Detschew, S. 2007. *Impact of ICT in the developing countries on the economic growth: implication derived from theory and empiricism.* Unpublished dissertation (Diploma). Institut für Wirtschaftswissenschaften, Technical University of Ilmenau.

Devaraj, S., Fan, M. and Kohli, R. 2002. Antecedents of B2C channel satisfaction and preference: validating e-commerce metrics. *Information Systems Research* 12(3): 316-333.

Dhamdhere, S.N. 2015. *Importance of knowledge management in the higher educational institutions. Turkish Online Journal of Distance Education 16(1): 162-183.*

Dillon, A. and Morris, M. 1996. User acceptance of information technology: theories and models. *Annual Review of Information Science and Technology* 3(1): 3-32.

Dokhtesmati, M. and Bousari, R.G. 2013. Knowledge sharing in Iranian academic institutions: meta-analysis approach. *Procedia - Social and Behavioural Sciences* 73: 383-387.

Dombeck, M. 2008. Learning theory. Available at: https://www.helenfarabee.org/poc/view_doc.php?type=doc&id=9285 Accessed on 6/03/2018.

Dooley, K.E. 1999. Towards a holistic model for the diffusion of educational technologies: an integrative review of educational innovation studies. *Educational Technology and Society 2*(4): 35-45.

Downs, G.W. and Mohr, L. 1976. Conceptual issues in the study of innovation. *Administrative Science Quarterly* 21(4): 700-714.

Dube, L. and Ngulube, P. 2012. Knowledge sharing in a multicultural environment: challenges and opportunities. *SA Journal Libs and Information Science* 78(1): 68-78.

Durojaye, K.A. and Tiamiyu, M.A. 2016. Knowledge sharing by professional surveyors in estate firms in Lagos metropolis, Nigeria. *Journal of Information Science, Systems and Technology* 1(1): 12-26.

Dwivedi, Y.K., Rana, N.P., Chen, H. and Williams, M.D. 2011. A meta-analysis of the Unified Theory of Acceptance and Use of Technology (UTAUT). In: Nüttgen, M., Godatsch, A., Kautz, K., Schirmer, I. and Blinn, N. eds. *Governance and sustainability in information systems: managing the transfer and diffusion of IT (Working Conference)*. Hamburg, Germany, September 22-24. Berlin: Springer. pp. 155-170.

Dwivedi, Y.K., Williams, M.D. and Lal, B. 2008. The diffusion of research on the adoption and diffusion of information technology. In: León, G., Bernardos, A.M., Casar, J.R., Kautz, K.

and De Gross, J.I. eds. *Open IT-based innovation: moving towards cooperative IT transfer and knowledge diffusion.* Madrid, Spain, October 22-24. Boston: Springer. pp. 3-22.

Eboh, E.C. 2009. *Social and economic research principles and methods.* Enugu: African Institute for Applied Economics.

Edmonds, W.A. and T.D. Kennedy. 2013. *An applied reference guide to research designs: quantitative, qualitative, and mixed methods.* Los Angeles, California: SAGE.

Edom, B. O. 2007. An Assessment of the problems of the use of ICT facilities in information sourcing and retrieval by the academic staff in Nigerian universities. *The Information Technologies* 4(2): 113-127.

Ekeh, F.I. 2003. *Research methodology and statistics in education*. Owerri: Modal Press Ltd.

Elwany, M.H. and Mahrous, Z. 2016. Investigating knowledge management enablers affecting knowledge management success in Middle East and North Africa. *Review of Contemporary Business Research* 5(1): 115-125.

Enakrire, R.T. 2015. *The use of information and communication technologies for the support of knowledge management in selected academic libraries in Nigeria and South Africa*. Unpublished thesis (PhD). Department of Library and Information Studies, University of Zululand.

Enakrire, R.T. and Ocholla, D.N. 2017. Information and communication technologies for knowledge management in academic libraries in Nigeria and South Africa. *South African Journal of Information Management* 19(1): 1-9.

Evangelista, P., McKinnon, A. and Sweeney, E. 2013. Technology adoption in small and medium-sized logistics providers. *Industrial Management and Data Systems* 11(37): 967-989.

Eze, S.C., Awa, H.O., Okoye, J.C., Emecheta, B.C. and Anazodo, R.O. 2013. Determinant factors of information communication technology (ICT) adoption by government-owned universities in Nigeria: a qualitative approach. *Journal of Enterprise Information Management26*(4): 427-443.

Fain, J.A. 2013. *Reading, understanding and applying nursing research*. Philadelphia: F.A. Davis Company.

Falola, T.O., Kirk-Greene, A.H.M., Ade-Ajayi, J.F. and Udo, R.K. 2017. Nigeria. Available at: https://www.britannica.com/place/Nigeria Accessed on 04/06/2017.

Fan, J. Zhang, P. and Yen, D.C. 2014. G2G information sharing among government agencies. *Information & Management* 51: 120-128.

Fari, S.A. and Ocholla, D. 2015. Comparative assessment of information and knowledge sharing among academics in selected universities in Nigeria and South Africa. *South African Journal of Libraries and Information Science* 81(1): 41-52.

Fatoki, O.C. 2017. *Attitude, demographic, personality and motivational factors influencing resources knowledge sharing behaviour*. Unpublished thesis (PhD). Africa Regional Centre for Information Science (ARCIS), University of Ibadan.

Federal University of Agriculture, Abeokuta. 2017. History of Federal University of Agriculture, Abeokuta, [Online]. 2017. Available at: https://www.unaab.edu.ng/index.php/index/about-unaab Accessed on 06/06/2017.

Federal University of Oye Library. 2017. *The primary purpose of university libraries is to support teaching, learning, and research in ways consistent with, and supportive of, the institutions mission and goals [Online]. Available at:*http://fuoye.edu.ng/en/homepage-menu/186-providing-essential-library-and-information-service-to-the-users Accessed on 24/09/2017.

Federal University of Technology Library. 2017. University Library, FUTA [Online]. Available at: https://lib.futa.edu.ng/page.php?pageid=107 Accessed on 24/09/2017.

Federal University of Technology, Akure. 2017. History of Federal University of Technology, Akure, [Online]. Available at: https://www.futa.edu.ng/futacms/index.php Accessed on 06/06/2017.

Federal University Oye. 2017. History of Federal University of Oye, [Online]. Available at: http://fuoye.edu.ng/en/about-fuoye/university-history Accessed on 06/06/2017.

Feilzer, M.Y. 2009. Doing mixed methods research pragmatically: implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research* 4(1): 6-16.

Fincham, J.E. 2008. Response rates and responsiveness of surveys, standards and the journal. *American Journal of Pharmaceutical Education* 72(2): 1-3.

Fishbein, M. and Ajzen, I. 1975. *Belief, attitude, intention and behaviour: an introduction to theory and research.* Reading, MA: Addison-Wesley.

Fishbein, M. and Ajzen, I. 1980. *Understanding attitudes and predicting social behaviour.* Englewood Cliffs, NJ: Prentice-Hall.

Folorunso, O. and Folorunso, F.M. 2010. Historical background, development and standard of public libraries: an overview of the Nigerian situation. *African Research Review: an International Multi-Disciplinary* (4): 302-308.

Fortin, D.R. 2000. Clipping coupons in cyberspace: a proposed model of behaviour for deal-prone Consumers. *Psychology and Marketing* 176: 513-534.

Frost, A. 2017. *Knowledge management tools.* Available at: http://www.knowledge-management-tools.net/different-types-of-knowledge.html Accessed on 28/09/2017.

Fullwood, R. and Rowley, J. 2017. An investigation of factors affecting knowledge sharing amongst UK academics. *Journal of Knowledge Management* 21 (5): 1254-1271.

Garaba, F. 2010. *An investigation into the management of the records and archives of former liberation movements in East and Southern Africa held by national and private archival institutions*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Gephart, R. 1999. Paradigms and research methods. Research Methods Forum. *Academy of Management Journal* 47(4): 454-462.

Gerolimos, M. and Konsta, R. 2008. Librarians' skills and qualifications in a modern informational environment. *Library Management* 29(8/9): 691-699.

Ghobahloo, M., Zulkiflu, N.B. and Aziz, F. A. 2010. The interactive user Information technology acceptance and satisfaction in small and medium-sized enterprises. *European Journal of Economics Finance and Administrative Sciences* 19: 7-27.

Giddings, L.S. 2006. Mixed-methods research: positivism dressed in drag? *Journal of Research in Nursing* 11(3): 195-203.

Gilja, H. 2013. *Barriers for communication and collaboration in emergency response: a qualitative case-study on operative emergency management in the Sør- and Nord-Trøndelag*

counties, Norway. Unpublished dissertation (Masters). Department of Psychology, Norwegian University of Science and Technology.

Gögüs, A., Nistor, N. and Lerche, T. 2012. Educational technology acceptance across cultures: a validation of the unified theory of acceptance and use of technology in the context of Turkish national culture. *The Turkish Online Journal of Educational Technology 11*(4): 384-408.

Gorard, G. 2004. *Combining methods in educational and social research.* Berkshire: Open University Press.

Gorman, G.E. and Clayton, P. 2005. *Qualitative research for the information professional: a practical handbook.* London: Facet Publishing.

Gorsuch, G. 2002. Assistant foreign language teachers in Japanese high schools: focus on the hosting of Japanese teachers. *The Japan Association for Language Teaching* 24(1): 5-32.

Grace, T.P.L. 2009. Wikis as a knowledge management tool. *Journal of Knowledge Management* 13(4): 64-74.

Gratton, C. and Jones, I. 2010. *Research methods for sports studies.* (2nd ed.). London: Routledge.

Gray, D.E. 2004. *Doing research in the real world*. London: SAGE.

Gray, K., Thompson, C., Clerehan, R., Sheard, J.and Hamilton, M. 2008. Web 2.0 authorship: issues of referencing and citation for academic integrity. *The Internet and Higher Education* 11(2):112-118.

Greener, I. 2011. *Designing social research: a guide for the bewildered*. Los Angeles: SAGE.

Grinnell, R.M. and Unrau, Y.A. 2011. *Social work research and evaluation: foundations of evidence-based practice.* (9th ed.). New York: Oxford University Press.

Grix, J. 2001. *Demystifying postgraduate research: from MA to PhD*. Birmingham: University of Birmingham Press.

Guetzkow J. and Lamont, M. 2004. What is originality in the humanities and social sciences? *American Sociological Review* 69(April): 190-212.

Gumbo, M.T., Mathipa, E.R. and Ngulube, P. 2015. Writing a dissertation or thesis. In: Mathipa, E.R. and Gumbo, M.T. (eds.). *Addressing research challenges: making headway for*

developing researchers. Noordwyk: Mosala-MASEDI Publishers and Booksellers cc. pp: 177-194.

Gupta, B., Dasgupta, S. and Gupta, A. 2008. Adoption of ICT in a government organization in a developing country: an empirical study. *The Journal of Strategic Information Systems* 17(2): 140-154.

Hafeez-Baig, A. and Gururajan, R. 2012. Does information and communication technology (ICT) facilitate knowledge management activities in the 21st Century? *Journal of Software* 7(11): 2437-2442.

Haliso, Y. 2011. Factors affecting information and communication technologies (ICTs) use by academic librarians in Southwestern Nigeria. *Library Philosophy and Practice (e-journal)*. Paper 571. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1602&context=libphilprac Accessed on 10/08/2017.

Hanneman, R.A., Kposowa, A.J. and Riddle, M. 2013. *Basic statistics for social research*. San Fransisco: Jossey-Bass.

Harinarayana, N.S. and Raju, N.V. 2010. Web 2.0 features in university library web sites. *The Electronic Library* 28(1): 68-88.

Harker, L.L. 2015. *Factors influencing knowledge sharing at a selected tertiary institution in South Africa.* Unpublished dissertation (Masters). Faculty of Business and Management Science, Cape Peninsula University of Technology.

Harris, L.R. and Brown, G.T.L. 2010. Mixing interview and questionnaire methods: practical problems in aligning data. *Practical Assessment, Research and Evaluation* 15(1): 1-19.

Hart, C. 1998. *Doing a literature review: releasing the social science imagination.* London: SAGE.

Hassan, B. 2006. Effectiveness of computer training: the role of multilevel computer self-efficacy. *Journal of Organizational and End User Computing* 18(1): 50.

Hau, Y.S., Kim, B., Lee, H. and Kim, Y. 2013. The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management* 33(2): 356-366.

Helmy, I, Adawiyah, W.R. and Banani, A. 2019. Linking psychological empowerment, knowledge sharing, and employees' innovative behaviour in Indonesian SMEs. *The Journal of Behavioural Science* 14(2):66-79.

Hendriks, P. 1999.Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management* 6(2): 91-100.

Herbert, T.T. 1976. *Dimension of organizational behaviour*. New York: Collier Macmillian.

Hezekiah Oluwasanmi Library. 2017. OAU Library [Online]. Available at: http://www.oauife.edu.ng/oau-library/ Accessed on 24/09/2017.

Hislop, D. 2013. *Knowledge management in organisations: a critical introduction*. (3rd ed.). Oxford: Oxford University Press.

Holden, R.J. and Karsh, B. 2010. The technology acceptance model: its past and its future in health care. *Journal of Biomed Informatics* 43(1): 159-172.

Holsapple, C.W. and Joshi, K.D. 2001. Organizational knowledge resources. *Decision Support Systems* 31(1): 39-54.

Homan, R. 1991. *The ethics of social research*. New York: Longman Inc.

Hong, W., Thong, J.Y.L., Wong, W.M. and Tam, K.Y. 2001. Determinants of user acceptance of digital libraries: an empirical examination of individual differences and system characteristics, *Journal of Management Information Systems* 18(3):97-124.

Hoskins, R. 2005. Information and Communication Technology (ICT) knowledge and skills of subject librarians at the university libraries of KwaZulu-Natal. *South African Journal of Libraries and Information Science* 71(2): 151-163.

Hoskins, R. 2005. Information and communication technology (ICT) knowledge and skills of subject librarians at the university libraries of KwaZulu-Natal. *South African Journal of Libraries and Information Science* 71(2): 151-163.

Hsu, M. H., Yen, C. H., Chiu, C. M., and Chang, C.M. 2006. A longitudinal investigation of continued online shopping behaviour: an extension of the theory of planned behaviour. *International Journal of Human-Computer Studies* 64(9): 889-904.

Hughes, W. 1994.The PhD in construction management. *Paper presented at the 10th Annual Association of Researchers in Construction Management (ARCOM) conference* held at Loughborough, 14-16 September.

IFLA KM Satellite Meeting. 2012. *Why special libraries are the right places to host a knowledge management center*. IFLA, Helsinki, Finland. Available at: http://www.arpalazio.net/ifla2012/html/abstracts_and_full_papers.pdf/Semertzaki.pdf Accessed on 22/08/2017.

Igbaria, M., Prasuraman, S., and Baroudi, J. 1996. A motivational model of microcomputer usage. *Journal of Management Information Systems*13 (1): 127-143.

Ikhsan, S., Sharifuddin, S.O. and Rowland, F. 2004. *Knowledge management in a public organisation in Malaysia: do people really share?* Available at: http://repo.uum.edu.my/13829/1/KM86.pdf Accessed on 30/09/2017.

International Federation of Library Association, 2001. *The public library service: IFLA/UNESCO guidelines for national development*. Hague: IFLA Publication.

International Federation of Library Association, 2017. National libraries. [Online]. Weblog post 13 April. Available at: https://www.ifla.org/national-libraries Accessed on 17/10/2017.

Ipe, M. 2003. Knowledge sharing in organizations: a conceptual framework. *Human Resource Development Review* 2(4):337-59.

Iqbal, M., and Khan, A. 2017. Examining the ICT skills of university librarians in a developing country: a study from the university of the Punjab, Lahore, Pakistan. *Library Philosophy and Practice (e-journal).* Paper 1639. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4690&context=libphilprac Accessed on 21/06/2019.

Islam, S. and Khan, R.H. 2014. Exploring the factors affecting knowledge sharing practices in Dhaka university library. *Library Philosophy and Practice (e-journal).*

Paper 1095. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2806&context=libphilprac Accessed on 16/09/2017.

Islam, S. and Khan, R.H. 2014. Exploring the factors affecting knowledge sharing practices in Dhaka University Library. *Library Philosophy and Practice (e-journal)*. Paper 1095. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2806&context=libphilprac Accessed on 16/06/2019.

Ismail, M.B. and Yusof, Z.M. 2010. The impact of individual factors on knowledge sharing quality. *Journal of Organizational Knowledge Management* 3(10): 1-13.

Israel, G.D. 1992. Determining sample size. University of Florida: IFAS Extension. Available at: https://www.tarleton.edu/academicassessment/documents/Samplesize.pdf Accessed on 04/09/2018.

Ivankova, N.V. and Creswell, J.W. 2009. Mixed methods. In: Heigham, J. and Croker, R. (eds.). *Qualitative research in applied linguistics: a practical introduction.* Basingstoke: Palgrave Macmillan. pp. 135-161.

Iyiogwe, S.O. 2002. *Research methodology: new practical approach for report writing in Nigerian universities with vocational statistics.* Ebonyi: WillyRose and Appleseed Publishing Coy.

Jamshed, S. 2014. Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy* 5(4): 87-88.

Javadi, M. and Zarea, K. 2016. Understanding thematic analysis and its pitfall. *Journal of Client Care: an International Nursing Journal* 1(1): 33-39.

Jennex, M.E. and Olfman, L. 2001. Development recommendations for knowledge management/organisational memory system. In: Sein, M.K., Munkvold, B.E., Orvik, T.U., Wojtkowski, W., Wojtkowski, W.G., Zupancic, J. and Wrycza, S. (eds.). *Contemporary trends in systems development.* New York: Springer. pp. 209-222.

Johanna, K.W. 2010. *Social media as a form of organizational knowledge sharing: a case study on employee participation at Wärtsilä*. Unpublished dissertation (Masters). Faculty of Social Science, University of Helsinki.

Johnson, B. and Christensen, L. 2008. *Educational research: Quantitative, qualitative, and mixed approaches.* New York: Sage Publications.

Johnson, T.P. and Wislar, J.S. 2012. Response rates and nonresponse errors in surveys. *Journal of the American Medical Association* 307(17): 1805-1806.

Kaba, B. and Touré, B. 2014. Understanding information and communication technology behavioural intention to use: applying the UTAUT model to social networking site adoption by young people in a least developed country. *Journal of the Association for Information Science and Technology 65*(8):1662-1674.

Kajang, Y.G., David, G.J. and Jatau, A.A. 2004. *Research and statistics made simple in education.* Plateau: Academic Trust Fund.

Kamau, L. 2014. *Technology adoption in secondary mathematics teaching in Kenya: an explanatory mixed methods study*. Unpublished thesis (PhD). Department of Mathematical Education, Syracuse University.

Karagoz, Y., Korthaus, A. and Augar, N. 2014. Barriers to knowledge sharing in ICT projects. *Proceeding of the 25th Australasian Conference on Information Systems,* 8th -10th Dec. 2014, Auckland, New Zealand.

Karahanna E., Straub, D. W. and Chervany, N. L. 1999. Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly* 23(2): 183–213.

Kasim, H.2015. Factors affecting knowledge sharing using virtual platforms: a validation of Unified Theory of Acceptance and Use of Technology (UTAUT). *International Journal of Managing Public Sector Information and Communication Technologies (IJMPICT)* 6(2): 1-19.

Kattimani, S.F. and Naik, R.R. 2013. Evaluation of librarianship and ICT skills of library and information professionals working in the engineering college libraries in Karnataka, India: a survey *Program. Electronic Library and Information Systems* 47(4): 345-369.

Kawulich, B. 2009. The role of theory in research. In: Garner, M., Wagner, C. and Kawulich, B. eds. *Teaching research methods in the social sciences.* Surrey: Ashgate Publishing Limited. pp. 37-48.

Kenneth Dike Library 2017. About the KDL [Online]. Available at: http://library.ui.edu.ng/index.php/about-kdl Accessed on 23/09/2017.

Kent, A. 1996. Technology: moving faster. *Australian Accountant* 66(1): 26-30.

Kerlinger, F.N. 1979. *Behavioural research: a conceptual approach.* New York: Holt, Reinhart and Winston.

Kess, P., Torkko, M. and Phusavat, K. 2007. Knowledge transfer for effective outsourcing relationships. *Paper presented at the 29th International Conference on Information Technology Interfaces (ITI), held at Cavtat, Croatia, June 25-28.* Available at: http://www.researchgate.net/publication/4266094_Knowledge_Transfer_for_Effective_Outsourcing_Relationships Accessed on 10/10/2017.

Khan, R. 2014. Quantitative data analysis. In: Du Plooy-Cilliers, F., Davis C. and Bezuidenhout R. (eds.). *Research matters*. Claremont: Juta. pp. 204-227.

Kim, S. and Ju, B. 2008. An analysis of faculty perceptions: attitudes toward knowledge sharing and collaboration in an academic institution. *Library and Information Science Research* 30(4): 282-290.

Kim, S. and Lee, H. 2004. Organisational factors affecting knowledge sharing capabilities in E-government: an empirical study. In: Wimmer, M.A. (ed.). *Knowledge management in electronic government.* KMGov 2004. Lecture Notes in Computer Science Vol.3035. Springer: Berlin, Heidelberg.

Kim, Y.M. and Abbas, J. 2010. Adoption of library 2.0 functionalities by academic libraries and users: a knowledge management perspective. *The Journal of Academic Librarianship* 36(3): 211- 218.

King, W.R. 2009. Knowledge management and organisational learning. In *King, W.R. Annals of information system.* New York: Springer.

Kivunja, C. and Kuyini, A.B. 2017. Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education* 6(5): 26-41.

Knabe, A. 2012. *Applying ajzen's theory of planned behaviour to a study of online course adoption in public relations education*. Unpublished thesis (PhD). Faculty of the Graduate School, Marquette University.

Kolawole, P.A. 2016. *Use of Web 2.0 technologies for teaching and learning in selected federal universities in Southwest Nigeria*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Koloniari, M., Vraimaki, E. and Fassoulis, K. 2016. Factors affecting knowledge creation in academic libraries. *Journal of Library and Information Science* 48(3): 1-14.

Kothari, C.R. 2004. *Research methodology*: *methods and techniques.* (2nd ed.). New Delhi: New Age International.

Kothari, C.R. 2013. *Research methodology: methods and techniques*. New Delhi: New Age International Publishers.

Koufaris, M. 2002. Applying the technology acceptance model and flow theory to online consumer bahaviour. *Journal of Information System Research* 13(2): 205-223.

Kripanont, N. 2007. *Examining a technology acceptance model of internet usage by academics within Thai business schools.* Unpublished thesis (PhD). School of Management and Information Systems, Victoria University.

Krubu, D.E. and Osawaru, K.E. 2011. The impact of information and communication technology (ICT) in Nigerian university libraries. *Library Philosophy and Practice (e-journal).* Paper 583. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1614&context=libphilprac Accessed on 09/08/2017.

Krysik, L.J. and Finn, J. 2013. *Research for effective social work practice.* (3rd ed.). New York: Routledge.

Kuhn, T. 1977.*The essential tension: selected studies in scientific tradition and change*. Chicago: University of Chicago Press.

Kumar, K. 2013. Knowledge on ICT skills among LIS professionals of engineering institutions of Andhra Pradesh State: a survey. *DESIDOC Journal of Library and Information Technology* 33(6): 480-487.

Kumar, R. and Kaur, A. 2006. Internet use by teachers and students in Engineering College of Punjab, Haryana, and Himachal Pradesh States of India: an analysis. *Electronic Journal of Academic and Special Librarianship* 7(1): 1-13

Kumaresan, B.S. and Swrooprani, S.C. 2013. Knowledge Sharing and factors influencing sharing in libraries: a pilot study on the knowledge sharing attributes of the Education City Library Community in Qatar. *Journal of Information and Knowledge Management* 12(1): 1-13.

Kwanya, T. 2017. Social bookmarking in digital libraries: intellectual property rights implication. In: Tella, A. and Kwanya, T. (eds.). *Handbook of research on managing intellectual property in digital libraries*. Hershey: IGI Global. pp. 1-18.

Kwanya, T., Stillwell, C. and Underwood, P.G. 2012. Library 2.0 versus other library service models: a critical analysis. *Journal of Librarianship and Information Science* 44(3): 145-162.

Kwasnicka, D., Dombrowski, S.U., White, M. and Sniehotta, F. 2016. Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories. *Health Psychology Review* 10(3): 277-296.

LaMorte, W.W. 2016. Behavioural change models. Boston University, School of Public Health. Available at http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories3.html Accessed on 13/03/2017.

Langer, E.J. 1989. *Mindfulness reading.* Reading, MA: Merloyd Lawrence Books.

Lawal, W.O., Agboola, I.O., Aderibigbe, N.A., Owolabi, K.A. and Bakare, O.D. 2014. Knowledge sharing among academic staff in Nigerian university of agriculture: a survey. *International Journal of Information Library and Society* 3(1): 26-32.

Lawal, W.O., Agboola, I.O., Aderibigbe, N.A., Owolabi, K.A. and Bakare, O.D. 2014. Knowledge sharing among academic staff in Nigerian university of agriculture: a survey. *International Journal of Information Library and Society* 3(1): 26-32.

Lederer, A.L., Maupin, D.J., Sena, M.P. and Zhuang, Y. 2000. The technology acceptance model and the World Wide Web. *Decision Support Systems* 29(3): 269-282.

Lee, H. and Choi, B. 2003. Knowledge management enablers, processes, and organisational performance: an integrative view and empirical examination. *Journal of Management Information System* 20(1): 179-228.

Lee, J. 2018. The effects of knowledge sharing on individual creativity in higher education institutions: socio-technical view. Administrative Sciences 8(2):21-37.

Lee, J., Cerreto, F. A. and Lee, J. 2010. Theory of planned behaviour and teachers' decisions regarding use of educational technology. *Educational Technology and Society* 13(1): 152-164.

Lee, M.C. 2009. Factors influencing the adoption of internet banking: an integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Application* 8(3): 130-14.

Lee, Y., Kozar, K.A. and Larsen, K.R. 2003. The technology acceptance model: past, present and future. *Communication of the Association for Information System* 12(50): 752-780.

Leedy, P. and Ormrod, J. 2001. *Practical research: planning and design.* (7th ed.). Upper Saddle River, NJ: Merrill Prentice Hall. Thousand Oaks: SAGE.

Leedy, P.D. and Ormrod, J.E. 2005. *Practical research: planning and design.* (8th ed.). New York: Prentice Hall.

Legris, P., Ingham, J., and Collerette, P. 2003. Why do people use information technology? A critical review of the technology acceptance model. *Information and Management* 40: 191-204.

Lian, J. 2015. Critical factors for cloud based e-invoice service adoption in Taiwan. *International Journal of Information Management: the Journal for Information Professionals* 35(1): 98-109.

Liang, T.P. Liu, C.C. and Wu, C.H. 2008. Can social exchange theory explain individual knowledge-sharing behavior? a meta-analysis. In: Association for Information System. eds. *Proceedings of the International Conference on Information Systems*. Paris, France, Curran Associates, Inc. pp. 3057-3074. Available at: https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1046&context=icis2008 Accessed on 11/03/2020.

Lin, C. P., and Bhattacherjee, A. 2000. Elucidating individual intention to use interactive information technologies: The role of network externalities. *International Journal of Electronic Commerce* 13(1): 85-108.

Lin, H. 2007. Knowledge sharing and firm innovation capability: an empirical study. *International Journal of Manpower* 28(3/4): 315-332.

Lin, J., Chan, H. and Jin, Y. 2004. Instant messaging acceptance and use among college students. *Paper presented at the 8th Pacific Asia Conference on Information Systems,* held in Fudan University, Shanghai, China, 8-11 July.

Liu, C., Liang, T., Rajagopalan, B., Sambamurthy, V., and Wu, J.C. 2011. Knowledge sharing as social exchange: evidence from a meta-analysis. *Pacific Asia Journal of the Association for Information Systems* 3(4): 21–47.

LoBiondo-Wood, G., and Haber, J. 2014. *Nursing research: methods and critical approach for evidence-based practice*. St Louis: Elsevier.

Lodico, M., Spaulding, D. and Voegtle, K. 2010. *Methods in educational research: from theory to practice.* (2nd ed.). San Francisco: Jossey-Bass.

Losh, S.C. 2004. Gender, educational and occupational digital gaps: 1983- 2002. *Social Science Computer Review* 22(2): 52-166.

Louho, R., Kallioja, M. and Oittinen, P. 2006. Factors affecting the use of hybrid media applications. *Graphic Arts in Finland* 35(3): 11-21.

Lyu, H., and Zhang, Z. 2017. Incentives for knowledge sharing: impact of organisational culture and information technology. *Enterprise Information Systems* 11(9): 1416-1435.

Mackenzie, N. and Knipe, S. 2006. Research dilemmas: paradigms, methods and methodology. *Issues in Educational Research* 16(2): 193-205.

Mahdi, O.R., Nassar, I.A. and Almsafir, M.K. 2019. Knowledge management processes and sustainable competitive advantage: an empirical examination in private universities. *Journal of Business Research* 94(1):320-334.

Mahmood, K. and Richardson, J.V. 2011. Adoption of Web 2.0 in US academic libraries: a survey of ARL library websites. *Electronic Library and Information Systems* 45(4): 365 -375.

Maiga, Z.B. 2017. *Knowledge sharing among academics in selected universities in Tanzania*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Maillet, E., Mathieu, L. and Sicotte, C. 2014. Modelling factors explaining the acceptance, actual use and satisfaction of nurses using an Electronic Patient Record in acute care settings: an extension of the UTAUT. *International Journal of Medical Informatics* 84(1): 36-47.

Majid, S. and Panchapakesan, C. 2015. Perception and knowledge sharing behaviour of pre-university students. *International Information and Library Review* 47(1-2): 30-38.

Malhotra, Y. and Galletta, D. 2003. Role of commitment and motivation in knowledge management systems implementation: theory, conceptualization, and measurement of antecedents of success (DDOMLII). In: Sprague, R.H. (ed). *Proceedings of the 36th Annual Hawaii International Conference on System Sciences*. Big Island, Hawaii: IEEE. pp. 115-125.

Mannie, A.,Van Niekerk, H.J. and Adendorff, C.M. 2013. Significant factors for enabling knowledge sharing between government agencies within South Africa. *South African Journal of Information Management* 15(2): 1-8.

Maponya, P.M. 2004. Knowledge management practices in academic libraries: a case study of the University of KwaZulu-Natal, Pietermaritzburg Libraries. Available at: http://mapule276883.pbworks.com/f/Knowledge+management+practices+in+academic+libraries.pdf Accessed on 25/09/2017.

Marks, D. and Yardley, L. 2004. *Research methods for clinical and health psychology*. Thousand Oaks, CA: SAGE.

Martins, C., Oliveira, T. and Popovic, A. 2014. Understanding the Internet banking adoption: a unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management* 34(1): 1–13.

Marvasti, A. B. 2004. *Qualitative research in sociology: an introduction*. London: SAGE.

Mathew, A.O., and Rodrigues, L.L. 2015. Effect of incentives on knowledge sharing and learning-evidence from the Indian IT Sector. *International Journal of Social, Behavioral, Educational, Economic and Management Engineering* 9(3): 763-768.

Maxfield, M.G. and Babbie, E.R. 2015. *Research methods for criminal justice and criminology*. (7th ed.). Stamford: Cengage Learning.

May, T. 1997. *Social research: issues, methods and process*. Philadelphia: Open University Press.

Mayekiso, N. 2013. *Knowledge sharing practices in academic libraries with special reference to the Unisa Library*. Unpublished thesis (Masters). Department of Library and Information Science, University of Cape Town.

Mbagwu, F.C., Ozioko, R.E. and Ugueri, E. 2017. The extent of information and communication technology (ICT) infrastructure application in library and information science education in Nigeria. *International Journal of Library and Information Science* 9(5): 44-53.

Medlin, B.D. 2001. *The factors that may influence a faculty member's decision to adopt electronic technologies in instruction*. Unpublished thesis (PhD). Educational Leadership and Policy Studies, Virginia Polytechnic Institute and State University.

Mesrinejad, F. 2011. *Human feasibility of using web 2.0 tools in academic library websites of Iran*. Unpublished dissertation (Masters). Department of Information Science, Isfahan University.

Meyer, P.W., Sivakumar, K. and Nakata, C. 1999. Implementation of industrial process innovations: factors, effects, and marketing implications. *Journal of Product Innovation Management* 16(3):295–311.Moon, J.W. and Kim, Y.G. 2001. Extending the TAM for a world-wide-web context. *Information and Management 38*(4): 217-230.

Mohamed Haneefa, K. and Abdul Shukkoor, C. K. 2010. Information and communication technology literacy among library professionals in Calicut University, Kerala. *DESIDOC Journal of Library and Information Technology 30*(6): 55-63.

Mohamed, H.K., Madhu, E.S. and Aswathy, T.A. 2014. Information and communication technology competency of library and information science students in Kerala. *Paper presented at 59th International Conference on Managing Libraries in the Changing Information World* held in Mahatma Gandhi Central Library, Roorkee, India, 22-24 February. Available at: https://www.researchgate.net/profile/Mohamed_Haneefa_K/publication/305298418_Information_and_Communication_Technology_Competency_of_Library_and_Information_Science_Students_in_Kerala/links/578727a008ae3949cf556c7f.pdf Accessed on 12/08/2017.

Moore, G.C, and Benbasat, I. 1991. Development of an instrument to measure the perceptions of adopting an information technology innovation. Information System Research 12:192-222.

Morris, M. and Venkatesh, V. 2000. Age differences in technology adoption decisions: implications for a changing work force. *Personnel Psychology* 53: 375-403.

Mosha, N.F. 2014. *Utilisation of social media tools to enhance knowledge sharing among knowledge workers at the Nelson Mandela African Institution of Science and Technology in Arusha Tanzania*. Unpublished dissertation (Masters). Department Information Science, University of Pretoria.

Mosha, N.F., Holmner, M. and Penzhorn, C. 2015. Utilisation of social media tools to enhance knowledge sharing among knowledge workers: a case of Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha, Tanzania. *Paper presented at the IFLA WLIC conference* held in Cape Town, South Africa, 15-21 August. Available at: http://library.ifla.org/1273/1/180-mosha-en.pdf Accessed on 20/07/2019.

Moss, N.D., O'Connor, E.L. and White, K.M. 2010. Psychosocial predictors of the use of enhanced podcasting in student learning. *Computers in Human Behaviour* 26(3): 302-309.

Mouton, J. 2001. *How to succeed in your master's and doctoral studies: a South African guide and resource book.* Pretoria: Van Schaik.

Muchaonyerwa, N. 2015. *Knowledge sharing strategies in university libraries in KwaZulu-Natal province of South Africa*. Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Mugenda, M.O. and Mugenda, G.A. 2003. *Research methods: quantitative and qualitative approaches (*Revised ed.). Nairobi: ACT Press.

Myers, M.D. 2009. *Qualitative Research in Business and Management.* London: SAGE.

National University Commission. 2018a. *List of State Nigerian universities and years founded*. Available at: http://nuc.edu.ng/nigerian-univerisities/state-univerisity/Accessed on 13/01/2018.

National University Commission. 2018b. *List of Private Nigerian Universities and years founded.* Available at: http://nuc.edu.ng/nigerian-univerisities/private-univeristies/ Accessed on 13/01/2018.

National University Commission. 2018c. *List of Federal Nigerian universities and years founded*. Available at: http://nuc.edu.ng/nigerian-univerisities/federal-univeristies/ Accessed on 13/01/2018.

Nazim, M. and Mukherjee, B. 2012. Managing and sharing knowledge in academic libraries. *Journal of Knowledge Management Practice* 13(2). Available at: http://eprints.rclis.org/19863/1/articl305.htm Accessed on 22/07/2019.

Ndakalu, O.A. 2014. *Access and utilisation of digital information services in academic libraries: the case of university of Nairobi*. Unpublished dissertation (Masters). Department of Library and Information Science, University of Nairobi.

Ndlela, L.T., and Toit, A.S.A. 2001. Establishing a knowledge management programme for competitive advantage in an enterprise. *International Journal of Information Management* 21(2):151-165.

Nengomasha, C.T., Mubuyaeta, M.M. and Beukes-Amiss, C.M. 2017. Organisational knowledge management: a case study of the ministry of gender equality and child welfare (MGECW) in Namibia. *Journal for Studies in Humanities and Social Sciences* 6(1): 18-40.

Neuman, W. 2011. *Social research methods: qualitative and quantitative approaches.* (7th ed.). Boston: Pearson.

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

Nevid, J. 2012. *Psychology: concepts and application.* (4th ed.). Wadsworth, CA: Cengage Learning.

Newman, I. and Benz, C.R. 1998. *Qualitative-quantitative research methodology: exploring the interactive continuum.* Carbondale, IL: Southern Illinois University Press.

Ngulube, P., Mokwatlo, K. And Ndwandwe, S. 2009. Utilisation and prevalence of mixed methods research in library and information research in South Africa 2002-2008. *South African Journal of Libraries and Information Science* 75(2): 105-116.

Ngulube, P. 2019. Mapping methodological issues in knowledge management research, 2009-2014. *International Journal of Knowledge Management* 15(1): 85-100.

Nguyen, L. 2008. A survey of the application of Web 2.0 in Australasian university libraries. *Library Hi Tech* 26(4): 630-53.

Nguyo, P.M., Kimwele, M.W. and Guyo, W. 2015. Influence of ICT on knowledge sharing in state corporations in Kenya: A case of the Kenya National Library Service. *International Academic Journal of Information Systems and Technology* 1 (4): 1-21.

Nigeria Library Online Forum (NLOF). 2016. Available at: nla-online-forum@yahoogroup.com Assessed on 08/09/2016

Nigeria Library Online Forum. (NLOF). 2016. Community of Nigerian librarians. Available at: nla-online-formmum@yahoogroup.com Assessed on 08/09/2016.

Nimbe Adedipe Library. 2017. Historical background of Nimbe Adedipe Library [Online]. Available at: http://library.unaab.edu.ng/index.php/about-the-library/history Accessed on 24/09/2017.

Nkamnebe, E.C., Okeke, I.E., Udem, O.K. and Nkamnebe, C.B. 2015. Extent of Information and Communication Technology Skills Possessed by Librarians in University Libraries in Anambra State, Nigeria. *Information and Knowledge Management* 5(9): 22-31.

Nonaka, I. and H. Tekeuchi, 1995. *The knowledge creating company: how Japanese companies create the dynamics of innovation.* (1st ed.). London: Oxford University Press.

Noor, N.M. and Salim, J. 2011. Factors influencing employee knowledge sharing capabilities in electronic government agencies in Malaysia. *International Journal of Computer Science* 8(4): 106-114.

Nooshinfard, F. and Nemati-Anaraki, L. 2014. Success factors of inter-organisational knowledge sharing: a proposed framework. *The Electronic Library* 32(2): 239-261.

Nwabueze, A.U. and Ibeh, B.O. 2016. Extent of ICT literacy possessed by librarians in federal university libraries in South East Nigeria. *International Journal of Digital Literacy and Digital Competence* 7(3): 13-22.

Nworgu, B.G. 1991. *Educational research: basic issues and methodology*. Owerri: Wisdom Publishers Limited.

Nyambi, E. and Maynard, S. 2012. An investigation of institutional repositories in state universities in Zimbabwe. *Information Development* 28(1): 55-67.

Nyema, S.M. 2014. Factors influencing container terminals efficiency: a case study of Mombasa entry port. *European Journal of Logistics Purchasing and Supply Chain Management* 2(3):39-78.

Obafemi Awolowo University. 2017. History of Obafemi Awolowo University, [Online]. Available at: http://www.oauife.edu.ng/administration/student-affairs/students-handbook/history/ Accessed on 06/06/2017.

Obiri-Yeboah, K., Fosu, C. and Kyere-Djan, R. 2013. Exploring the trend of ICT adoption in Tertiary Institutions in Ghana: a case study at Kwame Nkrumah University of Science and Technology (KNUST). *Information and Knowledge Management* 3(5): 44-52.

Ogunlana, E.K., Okunlaya, R.A., Ajani, F.O., Okunoye, T. and Oshinaike, A.O. 2013. Indices of job stress and job satisfaction among academic librarians in selected federal universities in South West Nigeria. *Annals of Library and Information Studies* 60(3): 212-218.

Ogunsola, K. and Lasode, D.O. 2017. Social and technology factors affecting knowledge sharing among architects in architectural firms in Ibadan, Nigeria. *African Journal for the Psychological Studies of Social Issues* 20(2): 132-151.

Ogunsola, L.A and Aboyade, W.A. 2005. Information and communication technology in Nigeria: revolution and evolution. *Journal of Social Science* 11(1): 7-14.

Ogunsola, L.A., Akindojutimi, B.E. and Omoike, A.D. 2011. Information literacy in Nigeria higher Institutions and role for librarians? *Ozean Journal of Social Sciences* 4(2): 85 – 92.

Ojedokun, A.A. and Okafor, V.N. 2015. ICT skills acquisition and competencies of librarians: implications for digital and electronic environment in Nigerian universities libraries. *The Electronic Library* 33(3): 502-523.

Ojeniyi, A.O. and Adetimirin, A.E. 2016. ICT literacy skills and electronic information resources use by lecturers in two private universities in Oyo State, Nigeria. *Library Philosophy and Practice (e-journal)*. Paper 1443. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4004&context=libphilprac Accessed on 06/08/2017.

Okite-Amughoro, F.A. 2017. *The effectiveness of Web 2.0 in marketing academic library services in Nigerian universities: a case study of selected universities in South-South Nigeria.* Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Okonedo, S. and Popoola, S.O. 2012. Effect of self-concept, knowledge sharing and utilization on research productivity among librarians in public universities in South-West, Nigeria. *Library Philosophy and Practice (e-journal).865*. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2040&context=libphilprac Accessed on 12/08/2017.

Okwilagwe, A.O.and Ogbomo, M.O. 2012. Computer skills as predictors of lecturers' use of scholarly electronic publications for research in federal university libraries in Nigeria. *Pacific North-West Library Association Quarterly* 78(3): 97-115.

Okye-Kwakwe, E. and Nor, K. 2011. Individual factors and knowledge sharing. *American Journal of Economics and Business Administration* 3(1): 66-72.

Oladipupo, S.O. and AbdulRahman, T.H. 2018. Predicting knowledge sharing behaviour among Non-academic staff in university of Ibadan, Nigeria. *Library Philosophy and Practice (e-journal).* Paper 2093. Available at:

https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5461&context=libphilprac Accessed on 10/06/2019.

Olasina, G. 2014. *Predictors of legislators' ICT acceptance and use in the performance of legislative functions at the Nigerian National Assembly.* Unpublished thesis (PhD). Department of Information Studies, University of KwaZulu-Natal.

Olatokun, W. and Nwafor, C.I. 2012. The effect of extrinsic and intrinsic motivation on knowledge sharing intentions of civil servants in Ebonyi State, Nigeria. *Information Development* 28(3): 216-234.

Olatokun, W.M. and Elueze, I.N. 2012. Analysing lawyers' attitude towards knowledge sharing. *South African Journal of Information Management* 14(1): 1-11.

Olayemi, K.J., Umaru, G.G., Yemi-Peters, O.E., Sokari, V. and Haliru, Z.A. 2017. The application of information and communication technology for service delivery in the serial unit of Bayero University Kano. *International Research Journals* 8(3): 27-33.

Oliveira, T., Faria, M., Thomas, M.A. and Popovic, A. 2014. Extending the understanding of mobile banking adoption: when UTAUT meets TTF and ITM. *International Journal of Information Management* 34(5): 689–703.

Olok, G.T., Yagos, W.O. and Ovuga, E. 2015. Knowledge and attitudes of doctors towards e-health use in healthcare delivery in government and private hospitals in Northern Uganda: a cross-sectional study. *Medical Informatics and Decision Making* 15(87): 1-10.

Olsen, M.E., Lodwick, D.G., and Dunlop, R.E. 1992. *Viewing the world ecologically.* Boulder, CO: Westview Press.

Omar, A.M. 2012. *The role of the university library in supporting information literacy*. Available at https://zulibrary.wordpress.com/2012/12/05/the-role-of-the-university-library-in-supporting-information-literacy-by-abbas-m-omar/ Accessed on 01/04/2017.

Omotayo, F.O. 2015. Knowledge management as an important tool in organisational management: a review of literature. *Library Philosophy and Practice (e-journal)*. Paper 1238. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=3330&context=libphilprac Accessed 15/05/2018.

Oni, O., Ola, O.S. and Dirmun, D. 2017. Information and Communication Technology skills of undergraduate students of the University of Jos, Plateau State, Nigeria. *International Journal of Academic Library and Information Science* 5(4): 136-143.

Onifade, F.N. 2014. *Knowledge sharing among librarians and organizational culture as factors affecting organizational effectiveness of federal university libraries in Nigeria*. Unpublished thesis (PhD). Department of Library, Archival and Information Studies, University of Ibadan.

Onifade, F.N. 2015. Knowledge sharing among librarians in federal university libraries in Nigeria. *Information and Knowledge Management* 5(3): 91-97.

Onodugo, V.A., Ugwuonah, G.E. and Ebinne, E.S. 2010. *Social science research: principles, methods and application.* Enugu: El 'Demak Publishers.

Onyango, R.A.O. 2002. Data collection instruments in information sciences. In: Aina, L.O. (ed). *Research in information sciences an African perspective*. Ibadan: Stirling Holden. pp. 91-98.

Onyije, L.E. and Opara, J.A. 2013. Information and communication technologies (ICTs): a panacea to achieving effective goals in institutional administration. *Mediterranean Journal of Social Sciences* 4(13): 227-230.

Opati, O.D. 2013. *The use of ICT in teaching and learning at the Makerere University: the case of college of education and external studies*. Unpublished dissertation (Masters). Faculty of Education, University of Oslo.

Opeke, O.R. and Opele, J.K. 2014. Assessment of knowledge sharing behaviours of postgraduate students in selected Nigerian universities. *Information and Knowledge Management* 4(11): 102-106.

Oshlyansky, L., Cairns, P. and Thimbleby, H. 2007. Validating the Unified Theory of Acceptance and Use of Technology (UTAUT) tool cross-culturally. In: Ormerod, T. and Sas, C. *Paper presented at the* p*roceedings of the 21st British HCI Group Annual Conference on People and Computers: HCI... but not as we know it-Volume 2*. Swindon: British Computer Society, pp. 83-86.

Osuigwe, N.E. and Uhegbu, A. N. 2012. Status of information technology skills among librarians in the information age: case study of Anambra State Library Board. *Library and Information Science Digest* 6(1): 70-90.

Osunade, O., Philips, O.F. and Ojo, O. 2007. Limitations of knowledge sharing in academia: a case from Nigeria. *Knowledge Management for Development Journal* 3(1): 26-34.

Ouakouak, M. and Ouedraogo, N. 2019.Fostering knowledge sharing and knowledge utilization. *Business Process Management Journal* 25(4):757-779.

Owiny, S.A., Mehta, K. and Maretzki, A.N. 2014. The use of social media technologies to create, preserve, and disseminate indigenous knowledge and skills to communities in East Africa. *International Journal of Communication* 8: 234-247.

Oye, N.D., Iahad, N.A. and Rahim, N.A. 2014. The history of UTAUT model and its impact on ICT acceptance and usage by academicians. *Education and Information Technologies* 19(1): 251-270.

Oyedapo, R.O. and Ojo, R.A. 2013. A survey of the use of electronic resources in Hezekiah Oluwasanmi Library, Obafemi Awolowo University, Ile-Ife, Nigeria. *Library Philosophy and Practice (e-journal).* Paper 884. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2200&context=libphilprac Accessed on 24/06/2019.

Oyedokun, T.T., Oyewumi, F.A., Akanbi, F.L. and Laaro, D.M. 2018. Assessment of ICT competencies of library staff in selected universities in Kwara State, Nigeria. *Library Philosophy and Practice (e-journal).* Paper 1797. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5055&context=libphilprac Accessed on 18/06/2019.

Pallant, J. 2013. *SPSS survival manual: a step by step guide to data analysis using SPSS.* (5th ed.). Berkshine: McGraw-Hill.

Parirokh, M., Daneshgar, F. and Fattahi, R. 2008. Identifying knowledge-sharing requirements in academic libraries. *Library Review* 57(2): 107-122.

Parisot, A.H. 1995. *Technology and teaching: the adoption and diffusion of technological innovations by a community college faculty.* Unpublished thesis (PhD). Faculty of Technology, Montana State University.

Paroutis, S. and Al Saleh, A. 2009. *Determinants of knowledge sharing using Web 2.0 technologies. Journal of Knowledge Management* 13(4): 52-63.

Parraga, I.M. 1991. Determinants of food consumption. *Journal of the American Dietetic Association* 90(5): 661.

Perron, B. E. and Gillespie, D. F. 2015. *Key concept measurement*. New York: Oxford University Press.

Phillips, D.C. and Burbules, N.C. 2000. *Postpositivism and educational research*. Lanham, MD: Rowman and Littlefield Publication.

Pickard, A.A. 2013. *Research methods in information*. (2nd ed.). London: Facet Publishing.

Pickett, L.L., Ginsburg, H.J., Mendez, R.V., Lim, D.E., Blankenship, K.R., Foster, L.E. and Sheffield, S.B. 2012. Ajzen's theory of planned behaviour as it relates to eating disorders and body satisfaction. *North American Journal of Psychology* 142: 339-354.

Plouffe, C.R., Hulland, J.S., and Vandenbosch, M. 2001. Research report: Richness versus parsimony in modelling technology adoption decisions: Understanding merchant adoption of a smart card-based payment system. *Information Systems Research* 12(2): 208-222.

Plsek, P. and Greenhalgh, T. 2001. The challenge of complexity in healthcare. *Complexity Science* 323:625-628.

Polit, D.F and Hungler, B.P 1999. *Nursing research: principles and methods*. (6th ed.). Philadelphia: Lippincott.

Polit, D.F. and Beck, C.T. 2004. *Nursing research: principles and methods*. Philadelphia: Lippincott.

Polit, D.F., and Beck, C.T. 2004. *Nursing research: Appraising evidence for nursing practice*. (7th ed). Philadelphia: Wolters Klower/Lippincott Williams and Wilkins.

Popoola, S.O. and Fagbola, O.O. 2014. Innovation capability of managers in Nigerian large-scale manufacturing companies. *South African Journal of Management* 16(1): 1-10.

Pouris, A. and Inglesi-Lotz, R. 2014. The contribution of higher education institution to the South African economy. *South African Journal of Science* 110(3/4): 1-5.

Priyanka, S. and Kumar, A. 2013. Understanding the evolution of technology acceptance model. *International Journal of Advance Research in Computer Science and Management Studies* 1(6): 144-148.

Punch, K. 2013. *Introduction to social research: quantitative and qualitative approaches*. (3rd ed.). London: SAGE.

Punnoose, A.C. 2012. Determinants of intention to use eLearning based on the technology acceptance model. *Journal of Information Technology Education: Research* 11(1): 301-337.

Quadri, G.O. 2012. Impact of ICT skills on the use of E-resources by information professionals: a review of related literature. *Library Philosophy and Practice (e-journal)*. 762. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1836&context=libphilprac Accessed on 05/08/2017.

Quadri, G.O. and Idowu, O.A. 2016. Social media use by Librarians for information dissemination in three Federal university libraries in Southwest Nigeria. *Journal of Library and Information Services in Distance Learning* 10(1-2): 30-40.

Quadri, R.F. and Abiodun, O.S. 2017. Evaluation of ICT literacy skills among students of federal polytechnic Offa, Kwara State, Nigeria: a review of related literatures. *Science Research Journal of Energy* 2(2): 27-41.

Quigfei, M., Shaobo, J. and Gang, Q. 2008. Mobile commerce user acceptance study in China: a revised UTAUT model. *Tsinghua Science and Technology* 13(3): 257–264.

Rafique, G.M. and Mahmood, K. 2018. Relationship between knowledge sharing and job satisfaction: a systematic review. *Information and Learning Science* 119(5/6): 295-312.

Rahi, S. 2017. Research design and methods: a systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics and Management Science* 6(2): 1-5.

Rahman, M.S. 2017. The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “testing and assessment” research: a literature review. *Journalof Education and Learning* 6(1): 102-112.

Rajasekar, S., Philominathan, P. and Chinnathambi, V. 2006. *Research methodology*. Available at https://arxiv.org/pdf/physics/0601009.pdf Accessed on 28/04/2017.

Ramayah, T. 2006. Interface characteristics, perceived ease of use and intention to use an online library in Malaysia. *Information Development* 22(2): 123-133.

Ramayah, T., Siron, R., Dahlan, N. and Mohamad, O. 2002. Technology usage among owners/managers of SME's: the role of demographic and motivational variables. In: Ramsey, E., Ibbotson, P., Bell, J. and Gray, B. eds. P*roceedings of the 6th Annual Asian-Pacific Forum for Small Business on "Small and Medium Enterprises Linkages, Networking and Clustering*. Kuala Lumpur, Malaysia, October 16-18. pp. 71-88.

Ramesh Babu, B. P., Vinayagamoorthy, P. and Gopalakrishnan, S. 2007. ICT skills among librarians in engineering educational institutions in Tamil Nadu. *DESIDOC Bulletin of Information Technology* 27(6): 55-64.

Rawstorne, P., Jayasuriya, R. and Caputi, P. 2000. Issues in predicting and explaining usage behaviours with the technology acceptance model and the theory of planned behaviour when usage is mandatory. In: Orlikowski, W.J. ed. *Proceedings of the 21st International Conference on Information Systems.* Brisbane, Queensland, Australia, December 10-13 pp. 35-44.

Razmerita, L., Kirchner, K. and Sudzina, F. 2009. Personal knowledge management: the role of Web 2.0 tools for managing knowledge at individual and organizational levels. *Online Information Review* 33(6): 1021-1039.

Reeves, T.C., and Hedberg, J.G. 2003. *Interactive learning systems evaluation*. Englewood Cliffs, N.J.: Educational Technology Publications.

Rexwana, N.L., Herselman, M.E. and Conradie, D.P. 2010.ICT applications as e-health solutions in rural healthcare in the Eastern Cape Province of South Africa. *Health Information Management Journal* 39(1): 17-29.

Riege, A. 2005. Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management* 9(3): 18-35.

Robson, C. 2002. *Real world research: a resource for social scientists and practitioner-researchers.* Oxford: Blackwell.

Robson, L.S., Amick, B.C., Moser, C., Pagell, M., Mansfield, E., Shannon, H.S., Swift, M.B., Hogg-Johnson, S., Cardoso, S. and South, H. 2016. Important factors in common among

organizations making large improvement in OHS performance: results of an exploratory multiple case study. *Safety Science* 86(1): 211-227.

Rogers, E. M. 1995. *Diffusion of innovations.* (4th ed.). New York: Free Press.

Rogers, E.M. 1983. *Diffusion of innov*ations. New York: Free Press.

Rogers, E.M. 1999. *Diffusion of innovations*. (4th ed.). New York: Free Press.

Rogers, M. E. 2003. *Diffusion of Innovations.* (5th ed.). New York: Free Press.

Rosen, P. 2005. *The effect of personal innovativeness on technology acceptance and use*. Unpublished thesis (PhD). Faculty of Graduate College, Oklahoma State University.

Rowley, J. 2012. Conducting research interviews. *Management Research Review* 35(3/4): 260-271.

Ryu, S., Ho, S.H. and Han, I., 2003. Knowledge sharing behaviour of physicians in hospitals. *Expert Systems with applications* 251: 113-122.

Saade, R.G., Nebebe, F. and Mak, T. 2009. The role of intrinsic motivation in system adoption: a cross-cultural perspective. *Journal of Information, Information Technology, and Organizations* 4:108-126.

Saade, R.G., Nebebe, F. and Tan, W. 2007. Viability of the technology acceptance model in multimedia learning environments: Comparative study. *Interdisciplinary Journal of Knowledge and Learning Objects* 37: 175–184.

Saczynski, J.S., McManus, D.D. and Goldberg, R.J. 2013. Commonly used data-collection approaches in clinical research. *The American Journal of Medicine* 126(11): 1-10.

Safahieh, H. and Asemi, A. 2010. Computer literacy skills of librarians: a case study of Isfahan university libraries, Iran. *The Electronic Library* 28(1): 89-99.

Sahin, I. 2006. Detailed review of Roger's diffusion of innovation theory and educational technology-related studies based on Rogers' theory. The Turkish Online Journal of Educational Technology 5(2): 14-23.

Samaradiwakara, G.D.M.N. and Gunawarddena, C.G. 2014. Comparison of existing technology acceptance theory and models to suggest a well improved theory/model. *International Technical Sciences Journal* 1(1): 21-36.

Sandhu, M.S., Jain, K.K. and Ahmad, U.K. 2011. Knowledge sharing among public sector employees: evidence from Malaysia. *International Journal of Public Sector Management* 24(3): 206-226.

Sankari, R.L. and Chinnasamy, K. 2014. ICT skills among librarians in engineering College in Salem and Namakkal district: a study. *International Journal of Humanities and Social Science Invention* 3(12): 9-17.

Satapthy, S.K. and Maharana, R.K. 2012. ICT skills of LIS professionals in engineering institutions of Orissa, India: a case study. *Library Philosophy and Practice (e-journal)*. Paper 627. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1659&context=libphilprac Accessed on 21/06/2019.

Saurombe, N.P. 2016. *Public programming of public archives in the East and Southern Africa Regional Branch on the International Council on Archives (ESARBICA): towards an inclusive and integrated framework*. Unpublished thesis (PhD). Department of Information Science, University of South Africa.

Scheaffer, R., Mendenhall, W. and Ott, R. 2006. *Elementary survey sampling.* (6th ed.). Duxbury: Thomson Brooks Cole.

Seena, S.T. and Pillai, K.G.S. 2014. A study of ICT skills among library professionals in the Kerala University Library system. *Annals of Library and Information Studies* 61: 132-141.

Sekaran, U. 2003. *Research methods for business: a skill-building approach.* New York: John Wiley and Sons.

Sentosa, I. and Mat, N.K.N. 2012. Examining a theory of planned behaviour (TPB) and technology acceptance model (TAM) in internet purchasing using structural equation modelling. *Researchers World* 3(2): 62.

Shahid, A. and Alamgir, R. 2011. *ICT enabled knowledge sharing-impact of ICT on knowledge sharing barriers: the case of Avanade*. Unpublished dissertation (Masters). Department of Ethics and Business Law, Malardalen University.

Sheikhshoaei, F. and Oloumi, T. 2011. Applying the technology acceptance model to Iranian engineering faculty libraries. *The Electronic Library* 29(3): 367-378.

Sheldon, K.M. and Elliot, A.J. 1999. Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model. *Journal of Personality and Social Psychology* 76: 482–497.

Shidi, H., Igyuve, S. and Tyonum, N. 2015. A study of information and communication technology (ICT) skills of staff of tertiary institutions in Benue state, Nigeria. *Information Technologist (The)* 12(2): 89-92.

Siddike, K. 2010. Exploring digital literacy competencies among the library and information professionals of Bangladesh: problems and recommendations. *Paper presented at 55th National Conference of ILA, Birla (India).* 21-24 January. Available at: http://eprints.rclis.org/15770/1/Exploring%20digital%20literac%20competencies%20among%20the%20information%20professionals%20of%20BD..pdf Accessed on 04/10/2016.

Simon, M.K. and Goes, J. 2013. *Scope, limitations, and delimitations*. Available at: https://pdfs.semanticscholar.org/c7cf/67676f60c9eb7abdfb958fb0dc65210f7f02.pdf Accessed on 25/09/2017.

Smarkola, C. 2011. A mixed-methodological technology adoption study: cognitive belief-behavioural model assessments in predicting computer usage factors in the classroom. In: Teo, T. (ed.). *Technology acceptance in education: research and issues*. Leiden: SencePublishers. pp. 9-41.

Speirs, M. 2010. *The development of Information and Communication Technologies in Nigerian Libraries.* Available at: http://eprints.rclis.org/14464/2/The_Development_of_Information_and_Communication_Technologies_in_Nigerian_Libraries-reformatted_single_spaced.pdf Accessed on 18/09/2017.

Sreenivasulu, V. 2000. The role of a digital librarian in the management of digital information system (DIS). *The Electronic Library* 18(1): 12-20.

Stafford, C. and Mearns, M.A. 2009. What happens when organisations embrace social networking? Knowledge sharing at a multinational business solutions corporation. *South African Journal of Information Management* 11(4). Available at: https://doi.org/10.4102/sajim.v11i4.414 Accessed on 09/07/2018.

Stevens, M. 2013. *Ethical issues in qualitative research*. London: King's College. Available at: https://www.kcl.ac.uk/sspp/policy-institute/scwru/pubs/2013/conf/stevens14feb13.pdf Accessed on 19/10/2017.

Strangor, C. 2015. *Research methods for the behavioural sciences*. (5th ed.). Stamford: Cengage Learning.

Straub, E. 2009. Understanding technology adoption: theory and future directions for informal learning. *Review of Educational Research* 79(2): 625-649.

Suebsin, C. and Gerdsri, N. 2009. Key factors driving the success of technology adoption: case examples of ERP adoption. In: Kocaoglu, D.F., Anderson, T. and Daim, T.U. eds. *Proceeding of the Portland International Conference on Management of Engineering Technology*. Oregon, USA. August 2-6. pp. 2638-2643.

Sunday, C.E. [n.d.] The role of theory in research division for postgraduate studies (DPGS): post graduate enrolment and throughput programe. Available at: https://www.uwc.ac.za/Students/Postgraduate/Documents/The%20role%20of%20theory%20in%20research.pdf. Accessed on 06/03/2018.

Susana, P.L., Peón, J.M., and Ordás, C.J. 2009. Information technology as an enabler of knowledge management: an empirical analysis. In: King, W.R. *Knowledge Management and Organizational Learning.* New York: Springer. pp. 111-129.

Suvarna, J. S. and Godavari, J. 2012. Higher education through ICT in rural areas. *Golden Research Thoughts* 1(10): 1-4.

Syed-Ikhsan, S.O.S. and Rowland, T. 2004. Knowledge management in a public organization: a study on the relationship between organizational elements and the performance of knowledge transfer. *Journal of Knowledge Management* 8(2): 95–111.

Szyjka, S. 2013. Understanding research paradigms: trends in science education research. *Problems of Education in the 21st Century* 43: 110-118.

Taiwo, A.A. and Downe, A.G. 2013. The theory of user acceptance and use of technology (UTAUT): a meta-analytic review of empirical findings. *Journal of Theoretical and Applied Information Technology* 49(1):48-58.

Tangaraja, G., Rasdi, R.M., Samah, B.A. and Ismail, M. 2016. Knowledge sharing is knowledge transfer: a misconception in the literature. *Journal of Knowledge Management* 20(4): 653-670.

Tavassoli-Farahi, M., Tajafari, M. and Tahamtan I. 2014. Evaluation of medical librarians' level of Information and Communication Technology skills based on MLA statements: a study in Iran. *Library Philosophy and Practice (e-journal)* 1140. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2932&context=libphilprac Accessed on 09/06/2019.

Taylor, S. and Todd, P. A. 2001. Understanding information technology usage: a test of competing models. *Information Systems Research* 6(2): 144-176.

Taylor, S. and Todd, P.A. 1995. Decomposition and crossover effects in the theory of planned behaviour: a study of consumer adoption intentions. *International Journal of Research in Marketing* 12(2): 137-155.

Tella, A. 2016. Knowledge sharing intention among information professional in Nigeria: a statistical analysis. *Library and the Academy* 16(2): 225-245.

Teo, T., Luan, W.S. and Sing, C.C. 2008. A cross-cultural examination of the intention to use technology between Singaporean and Malaysian pre-service teachers: an application of the technology acceptance model (TAM). *Educational Technology and Society11* (4): 265-280.

Terre Blanche, M., Durrheim, K. 2006. History of the present: social science research in context. In: Terre Blanche, M., Durrheim, K. and Painter D. (eds.). *Research in practice: applied methods for the social sciences.* (2nd ed.). Cape Town: University of Cape Town Press. pp. 1-18.

Thanh, N.C. and Thanh, T.T.L. 2015. The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science* 1(2): 24-27.

Thibaut, J.W. and Kelley, H.H. 1959. *The Social psychology of groups*. New York: Wiley.

Thomas, P.Y. 2010. *Towards developing a web-based blended learning environment at the University of Botswana*. Unpublished thesis (PhD). Department of Teacher Education, University of South Africa.

Thompson, R.L., Higgins, C.A. and Howell, J.M. 1991. Personal computing: toward a conceptual model of utilization. *MIS Quarterly* 15 (1): 124-143.

Tibenderana, P.K. G. and Ogao, P.J. 2009. Information communication technologies acceptance and use among university communities in Uganda: a model for hybrid library services end-users. *International Journal of Computing and ICT Research* 1(1): 60-75.

Toews, D. 2003. The new Tarde: sociology after the end of the Social. *Theory Culture and Society 20* (5): 81-98.

Tohidinia, Z. and Mosakhani, M. 2010. Knowledge sharing behaviour and its predictors. *Industrial Management and Data Systems* 110(4): 611-631.

Triandis, H. 1977. *Interpersonal Behaviour*. Monterey, CA: Brooks/Cole Publications.

Tripathi, M. and Kumar, S. 2010. Use of Web 2.0 tools in academic libraries: a reconnaissance of the international landscape. *International Information and Library Review* 42(3): 195-207.

Troung, Y. 2009. An evaluation of the theory of planned behaviour in consumer online video and television services. *The Electronic Journal Information Systems Evaluation* 12(2): 177-186.

Turyasingura, W. 2011. *Interdependency of knowledge management and organisational learning: the case of higher education institutions in Uganda*. Unpublished thesis (PhD). School of Business Administration, University of the Witwatersrand.

Twum-Darko, M. and Harker, L.L., 2015. Factors influencing knowledge sharing amongst higher education academics at a university in South Africa. *Journal of Corporate Ownership and Control* 12(2): 280-292.

Ubogu, J.O. and Okiy, R.B.2011. Sources of funds in academic libraries in Delta State, Nigeria. *Library Philosophy and Practice (e-journal). 676*. Available at

http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1750&context=libphilprac Accessed on 01/04/2017.

Ugah, A.D. 2008. Availability and accessibility of information sources and the use of library services at Michael Opkara University of Agriculture. *Library Philosophy and Practice (e-journal)*. Paper 190. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1195&context=libphilprac Accessed on 19/06/2019.

Ugwu, C.I. 2016. Implications of the perceived factors for knowledge management implementation in Federal university libraries in Nigeria. *Library Philosophy and Practice (ejournal)*. Paper 1448. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4024&context=libphilprac Accessed on 18/06/2019.

Ugwu, C.I. and Ekere, J.N. 2019. Knowledge management for improving services in federal university libraries in Nigeria. *Journal of Librarianship and Information Science* 51(2): 356-369.

Ugwuanyi, C.F. 2011. *Influence of ICT literacy skills on its application for library use among academic librarians in South-East Nigeria.* Unpublished thesis (Masters). Department of Library and Information Science, University of Nigeria Nsuka.

Umeji, E.C., Ejedafiru, E.F. and Oghenetega, L.U. 2013. Information/ICT literacy levels and skills among librarians in Madonna university library, Okija. *Journal of Humanities and Social Science (IOSR-JHSS)* 15(3):70-75.

United Nations Educational, Scientific and Cultural Organisation, Action Plan. 2012. Reaching the 2015 literacy target: delivering on the promise. In high level international round table on literacy. UNESCO, Paris, 6-7 September 2012. Available at: http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/ED/pdf/Nigeria.pdf Accessed on 18/10/2017.

University of Ibadan. 2017. The history of university of Ibadan [Online]. Available at: http://ui.edu.ng/History Accessed on 06/06/2017.

University of KwaZulu-Natal Ethical Policy Guidelines. 2014. General guidelines for the ethics review processes. Available at: http://research.ukzn.ac.za/Libraries/Research_Document/General_Guidelines_for_the_Ethics_Review_Processes.sflb.ashx Accessed on 29/08/2018.

University of Lagos Library. 2017. Welcome remarks from the university librarian's desk, [Online]. Available at:http://library.unilag.edu.ng/index.php/component/content/category/16-unilag Accessed on 24/09/2017.

University of Southern California Libraries Guides. 2018. Organizing your social sciences research paper: theoretical framework [Online]. Available at: http://libguides.usc.edu/writingguide/theoreticalframework Accessed on 06/03/2018.

University of Southern California. 2013. *Organizing your social science research paper: theoretical framework.* Available at: https://libguides.usc.edu/writingguide/discussion Accessed on 24/07/2019.

Usman, S.H. and Oyefolahan, O. 2014. Determinants of knowledge sharing using web technologies among students in high education. *Journal of Knowledge Management, Economics and Information Technology* 4(2): 1-22.

Vallerand, R. 2001. A hierarchical model of intrinsic and extrinsic motivation in sport and exercise. In: Roberts, G.C.ed. *Advances in motivation in sport and exercise*. Champaign, IL: Human Kinetics. pp. 263-319.

Van Den Hoof, B. and De Ridder, J.A. 2004. Knowledge sharing in context: the influence of organizational commitment, communication climate and communication-computer-mediated communication (CMC) use on knowledge sharing. *Journal of Knowledge Management* 8(6): 117-130.

Van den Hooff B., Elving W., Meeuwsen J.M., and Dumoulin C. 2003. Knowledge sharing in knowledge communities. In: Huysman M., Wenger E., and Wulf V. (eds.). *Communities and Technologies*. Dordrecht: Springer. pp. 119-141.

Van Den Hooff, B. and De Ridder, J.A. 2004. Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management* 8(6): 117-130.

Van der Heijden, H. 2004. User acceptance of hedonic information systems. *MIS Quarterly* 695-704.

Van Raaij, E.M. and J. J. L. Schepers, J.J.L. 2008. The acceptance and use of a virtual learning environment in China. *Computers and Education* 50(3): 838–852.

Venkatesh, V. and Davis, F.D. 1996. A model of the antecedents of perceived ease of use: development and test. *Decision Sciences* 27: 451-481.

Venkatesh, V. and Davis, F.D. 2000. A theoretical extension of the technology acceptance model: four longitudinal filed studies. *Management Science* 46: 186-204.

Venkatesh, V., Brown, S., Maruping, L. and Bala, H. 2008. Predicting different conceptualizations of system use: The competing roles of behavioural intention, facilitating conditions, and behavioural expectation. *MIS Quarterly Archives* 32(3): 483-502.

Venkatesh, V., Brown, S.A. and Bala, H. 2013. Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly* 37(1):21-54.

Venkatesh, V., Morris, M. Davis, G. and Davis, F. 2003. User acceptance of information technology: toward a unified view. *MIS Quarterly* 27(3): 425-478.

Venkatesh, V., Morris, M.G., Sykes, T.A. and Ackerman, P.L. 2004. Individual reactions to new technologies in the workplace: the role of gender as a psychological construct. *Journal of Applied Social Psychology* 34: 445-467.

Venkatesh, V., Sykes, T. and Zhang, X. 2011. 'Just what the doctor ordered': a revised UTAUT for EMR system adoption and use by doctors. In: Sprague, R.H. ed. *Proceedings of the 44th Hawaii International Conference on System Sciences*, Washington DC, IEEE. January 4-7. pp. 1-10.

Virkus, S. 2012. *Knowledge sharing systems.* Available at: http://www.tlu.ee/~sirvir/Information%20and%20Knowledge%20Management/Knowledge%20Sharing%20Systems/the_concept_of_knowledge_sharing.html Accessed on 12/08/2017.

Virtanen, J. and Neiminen, P. 2002. Information and communication technology among undergraduate dental students in Finland European. *Journal of Dental Education* 6(4): 147-152.

Vosloo, J. J. 2014. *A sport management programme for educator training in accordance with the diverse needs of South African schools*. Unpublished thesis (PhD). Department of Movement Education, North-West University.

Vuori, V. and Okkonen, J. 2012. Knowledge sharing motivational factors of using an intra-organizational social media platform. *Journal of Knowledge Management* 16(4):592-603.

Walsham, G. 1995. Interpretive case studies in information system research: nature and method. *European Journal of Information Systems* (4):74-81.

Wang, H.Y. and Wang, S.H. 2010. User acceptance of mobile internet based on the unified theory of acceptance and use of technology: Investigating the determinants and gender differences. *Social Behaviour and Personality: an International Journal* 38(3): 415-426.

Wawire, O.F. and Messah, O. 2010. Challenges faced in establishing university libraries in Kenya. *International Journal of Library and Information Science* 2(8): 148-154.

Wellman, J.L. 2009. *Organisational learning: how companies and institutions manage and apply knowledge*. New York: Palgrave Macmillian.

Welman, C, Kruger, F, and Mitchell, B. 2005. *Research methodology*. Oxford: Oxford University Press.

Wiewiora, A. 2011. *The role of organisational culture, trust and mechanisms in inter-project knowledge sharing*. Unpublished thesis (PhD). Faculty of Built Environment and Engineering, Queensland University of Technology.

Wildemuth, B.M. 1993. Post-positivist research: two examples of methodological pluralism. *The Library Quarterly* 63(4):450-468.

Willis, J. 1995. A recursive, reflective instructional design model based on constructivist-interpretivist theory. *Educational Technology* 35(6): 5-23.

Wolf, B. 2011. Introduction to knowledge management. In: Dalkir, K. *Knowledge management in theory and practice.* (2nd ed.). Cambridge: The MIT Press. pp. 1-27.

Wu, L., Li, J.Y. and Fu, C.Y., 2011. The adoption of mobile healthcare by hospital's professionals: an integrative perspective. *Decision Support Systems* 51(3): 587-596.

Wu, Y., Tao, Y. and Yang, P. 2007. Using UTAUT to explore the behaviour of 3G Mobile Communication Users. In: Helander, M., Xie, M., Jiao, R., and Tan, K.C. eds. *IEEE International Conference on Industrial Engineering and Engineering Management*, Singapore, December 2-5. pp. 199-203. Available at: http://ieeexplore.ieee.org/document/4419179/ Accessed on 05/04/2018.

Yaghi, K., Barakat, S., Alfawaer, Z.M., Shkokani, M. and Nassuora, A. 2011. Knowledge sharing degree among undergraduate students: a case study at applied science private university. *International Journal of Academic Research* 3(1): 20-24.

Yang, H. and Yoo, Y. 2004. It's all about attitude: revisiting the technology acceptance model. *Decision Support Systems* 38(1): 19-31.

Yayla, A. and. Hu, Q. 2007. User acceptance of e-commerce technology: A meta analytic comparison of competing models. *Paper presented at the 15th European conference on Information System (ECIS 2007),* held at St. Gallen, Switzerland, June 7-9.

Yeşil, S. and Hirlak, B. 2019. Exploring knowledge-sharing barriers and their implications. In: Jennex, M.E. (ed.). *Effective knowledge management systems in modern society*. Hershey: IGI Global. pp. 99-122.

Zainab, A.M., Kiran, K., Karim, N.H.A. and Sukmawati, M. 2018. UTAUT'S performance consistency: empirical evidence from a library management system. *Malaysian Journal of Library and Information Science* 23(1):17-32.

Zhou, M. and Brown, D. 2015. *Educational learning theories*. Georgia: University System of Georgia.

Zhou, T., Lu, Y. and Wang, B. 2010. Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behaviour* 26: 760-767.

APPENDICES

Dear Respondent,

Appendix 1: Letter of Informed Consent

Information Studies
School of Social Sciences
University of KwaZulu-Natal (UKZN)
Pietermaritzburg Campus
Private Bag X01
Scottsville 3209
South Africa
Telephone: 063 815 9834

28 July, 2017

Informed Consent Letter

Invitation to Participate in a Survey

I, Ganiyu Oluwaseyi Quadri, of the University of KwaZulu-Natal, kindly invite you to participate in the research project entitled "information and communication technology (ICT) skills on knowledge sharing among librarians in federal university 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 influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university 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.

28th July 2017

---------- ----------

Signature Date

I…… (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

Name: ..... Date: ..... Signature: .....

Supervisor's details

Dr Francis Garaba
University of KwaZulu-Natal
0745135910
garaba@ukzn.ac.za

Student's details

Ganiyu Oluwaseyi Quadri.
University of KwaZulu-Natal
064 356 2730
qudriseyi@gmail.com

HSSREC Research Office: Ms Phumelele Ximba
Institution: University of KwaZulu-Natal Research Office
Telephone Number: O31-260 8350
Email address: HssrecHumanities@ukzn.ac.za

Appendix 2: Questionnaire for Librarians

SECTION A: BACKGROUND INFORMATION

1. What is the name of your institution ……..
2. What is the name of your library……
3. In which section of the library are you working…….
4. Position/Rank: ……
5. Gender: Male ( ) Female ( )
6. Age category: a) 20-24 ( ) b) 25-30 ( ) c) 31-35 ( ) d) 36-40 ( ) e) 41-45 ( ) f) 46-50 ( ) g) 51-55 ( ) h) 56-60 ( ) i) 61-65 ( ) j) 66-70 ( )
7. Highest educational qualification: a) Bachelor's Degree ( ) b) Master's Degree ( ) c) PhD. ( )
8. How long have you been working in your library? a) 1-5 ( ) b) 6-10 ( ) c) 11-15 ( ) d) 16-20 ( ) e) 21-25 ( ) f) 26-30 ( ) g) 31-35 ( ).

SECTION B: LEVEL OF ICT SKILLS.

9. What do you think/know is your level of ICT skills? …….....
……..

Instruction: Please read each statement and tick (√) the most applicable option.

S/N	**Effort Expectancy**	**Excellent**	**Above Average**	**Average**	**Below Average**	**Very poor**
KCS1.	**Knowledge of Computer System** I can locate and run a programme (software application) on computer					
KCS2.	I can use CD-ROM based software					
KCS3.	I can use cloud based software e.g. drop box, e-mail					
KCS4.	I am able to organize electronic files into folders					
KCS5.	I can search for files on the computer system					
KCS6.	I can backup files onto various media types (CD-RW, USB, Hard drive etc.)					
KCS7.	I can connect computer and its peripherals (mouse, keyboard, monitor, ipad etc.)					
WPS8.	**Word Processing Skills** I can use simple editing features e.g. bold, italics, font size etc.					
WPS9.	I can import text and images into a word processed document					
WPS10.	I can insert tables in a document					
WPS11.	I have the skill to alter the layout and positioning of text and images					
WPS12.	I can create new document templates					
WPS13.	I can divide page layout into columns					

S14.	**Spreadsheets (e.g Microsoft Excel and Numbers)** I am able to input data in rows and columns					
S15.	I can sort data					
S16.	I can input and use formula for solving problems					
S17.	I am able to produce charts and graphs for data analysis					
S18.	I can print a selected area					
P19.	**Presentation (e.g. Microsoft power point and keynote)** I can create a basic presentation package					
P20.	I have the skill to modify colours of text, background and lines					
P21.	I can change slide timings, animations and presentation options					
P22.	I can produce appropriate handout formats					
IUSS23.	**Internet use and search skills** I can access an Internet site via its website address					
IUSS24.	I can use search engines to find information					
IUSS25.	I can use social media platforms effectively					
IUSS26.	I can use cloud computing e.g. Google drive, drop box etc.					
IUSS27.	I can use electronic mail effectively (e.g. Gmail, Yahoomail, Hotmail etc)					
IUSS28.	I can download files from the internet					
IUSS29.	I can attach documents or files to e-mails					
IUSS30.	I know how to work in a networked environment					

SECTION C: EFFECTS OF ICT SKILLS ON KNOWLEDGE SHARING

10. What do you think are the effects of ICT skills on knowledge sharing among librarians in your library?

Instruction: Please read each statement and tick (√) the most applicable option using the following scale: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

S/N	**Performance Expectancy**	**SD**	**D**	**N**	**A**	**SA**
EIS1.	ICT provides easy access to knowledge by librarians					
EIS2.	ICT promotes timely dissemination of knowledge					
EIS3.	ICT promotes dissemination of knowledge to wider audiences					

EIS4.	ICT facilitates quick delivery and dissemination of knowledge					
EIS5.	ICT enhances knowledge sharing and solves existing knowledge sharing issues					
EIS6.	ICT helps to locate the various elements relevant to the process of knowledge sharing					
EIS7.	ICT facilitates new organizational forms for knowledge sharing such as Online knowledge tram.					
EIS8.	Sufficient skills to use social media enhances knowledge sharing.					
EIS9	Promoting knowledge sharing and learning					

SECTION D: METHODS OF KNOWLEDGE SHARING

11. What methods do you use to share knowledge with other librarians in your library?

Instruction: Please tick (√) as many as are applicable to you.

S/N	**Methods** **Traditional Methods (Social Influence)**	√
MKS 1.	Face-to-face	
MKS 2.	Meetings	
MKS 3.	Storytelling	
MKS 4.	Peer assistance	
MKS 5.	Training (seminar/workshop/symposium)	
MKS 6.	Mentorship	
MKS 7.	Brainstorming	
MKS 8.	Community of practice	
	Technological/Web-based tools (Effort Expectancy and Performance Expectancy)	
MKS 9.	Web conferencing (video/audio conferencing	
MKS 10.	Share net	
MKS 11.	Online discussion group/fora.	
MKS 12.	Electronic white board	
MKS 13.	Instant messaging (WhatsApp, Imo, Instagram, Facebook messenger, Skype, Yahoo messenger)	
MKS 14.	Electronic mail (e-mail)	
MKS 15.	RSS Feed	
MKS 16.	Blog	
MKS 17.	Wikis	
MKS 18.	Social networking site (MySpace, Facebook, Flickr, Twitter,)	
MKS 19.	Nigeria Library Online Forum	

MKS 20.	Research gate/Academia.edu	
MKS 21.	Teleconferencing	
MKS 22.	Social bookmarking and tagging	

MKS 23. Other, please specify…….....
……
…….

SECTION E: FREQUENCY OF KNOWLEDGE SHARING

12. What is the frequency of knowledge sharing among librarians in your library?

Instruction: Please read each statement and tick (√) the most applicable option using the following scale: Daily, Weekly, Monthly, Rarely, Never

Social Influence	**Daily**	**Weekly**	**Monthly**	**Rarely**
I always share with other librarians in my library whenever I have learned something new				
I tell the librarians in my library what I know, when they ask me about it				
I tell the librarians in my library about my skills, when they ask me about it				
I ask other librarians in my library what they know when I need particular knowledge about something				
Librarians in my library share with me what they know, when I ask them about it				
Librarians in my library share with me about their skills, when I ask them about it				

SECTION F: LEVEL OF KNOWLEDGE SHARING

13. What is the level of knowledge sharing among librarians in your library?

Instruction: Please read each statement and tick (√) the most applicable option using the following scale: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA)

S/N	**Social Influence**	**SD**	**D**	**N**	**A**	**SA**
LKS1.	I'm afraid to lose influence and recognition when sharing knowledge					
LKS2.	I perform more effective when I share what I know					
LKS3.	Whenever I have learned something new, I tell other librarians in my library					
LKS4.	I tell the librarians in my library what I know, when they ask me about it					
LKS5.	I tell the librarians in my library about my skills, when they ask me about it					

LKS6.	I ask other librarians in my library what they know when I need particular knowledge about something					
LKS7.	Librarians in my library tell me what they know, when I ask them about it					
LKS8.	Librarians in my library tell me about their skills, when I ask them about it					
LKS9.	I keep important information to myself					
LKS10.	It is important that librarians are interested in one another's knowledge					

SECTION G: FACTORS AFFECTING KNOWLEDGE SHARING

14. What are the factors that affect knowledge sharing among librarians in your library?

Instruction: Please read each statement and tick (√) the most applicable option using the following scale: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

S/N	**Individual Factors (Social Influence)**	**SD**	**D**	**N**	**A**	**SA**
IF1.	I do not have enough time to focus on sharing knowledge					
IF2.	My colleagues do not appreciate the knowledge I wish to share					
IF3.	I am not aware of the value and benefit of sharing possessed knowledge to others					
IF4.	Sharing my knowledge may reduce or jeopardize others job security.					
IF5.	I cannot share my knowledge due to poor communication and interpersonal skills					
IF6.	My institution does not give me the incentive to want to share knowledge					
IF7.	There are no reward incentives					
IF8.	My boss/supervisor does not support my efforts to share my knowledge					
IF9.	Reluctance to use technology due to lack of familiarity to knowledge sharing					
	Organizational Factors (Social Influence)					
OF1.	Corporate culture in my institution does not provide sufficient support for knowledge sharing practices					

OF2.	The physical work environment and layout of work areas restrict effective knowledge sharing practices					
OF3.	There is no organizational policy as regard knowledge sharing					
OF4.	Lack of formal and informal spaces to share and generate my knowledge					
OF5.	Shortage of appropriate infrastructure to support knowledge sharing practices					
OF6.	Knowledge flow and communication are restricted into certain directions (e.g. top-down)					
OF7.	There are no reward incentives					
QF8.	Lack of alternative power supply.					
	Technological Factors (Facilitating Condition)					
TF1.	There is no IT infrastructure in place for sharing knowledge (Internet connectivity, Inadequate computers, LAN, WAN.)					
TF2.	The organization does not provide technological know-how share knowledge					
TF3.	I do not have sufficient technological skills to share knowledge					
TF4.	Lack of technical support and maintenance of integrated IT systems to share knowledge					
TF5.	Lack of organizational training to use new technology to share knowledge					
TF6.	I have enough Internet experience to share my knowledge					

14. Please provide other factors encountered when sharing knowledge……...
……..……
…….....

15. Please provide any suggestions on how knowledge can be better shared among librarians so as to enhance team work and job productivity…….
……
……
……
……

Thank you for completing this questionnaire.

Appendix 3: Informed Consent letter for Interviews

Information Studies
School of Social Sciences
University of KwaZulu-Natal (UKZN)
Pietermaritzburg Campus
Private Bag X01
Scottsville 3209
South Africa
Telephone: 063 815 9834

28 July, 2017

Dear Respondent,

Informed Consent Letter for Interviews

Invitation to Participate in an Interview

My name is Ganiyu Oluwaseyi Quadri, 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 the doctoral degree. The purpose of this study is to investigate "ICT skills and knowledge sharing in the selected university libraries in South-West Nigeria.

I will be exceptionally grateful if you could assist me in this project by giving me 30 to 40 minutes of your time for me to engage you in an interview as part of my research. Your response will be kept anonymous and confidential.

Thank you for participating in this research project.

28th July 2017

---------- ----------

Signature Date

I…… (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

Additional consent

I hereby provide consent to:

Audio/Video-record my interview

YES	NO

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Name: ..... Date: ..... Signature: .....

Supervisor's details

Dr Francis Garaba
University of KwaZulu-Natal
0745135910
garaba@ukzn.ac.za

Student's details

Ganiyu Oluwaseyi Quadri.
University of KwaZulu-Natal
064 356 2730
qudriseyi@gmail.com

HSSREC Research Office: Ms Phumelele Ximba
Institution: University of KwaZulu-Natal Research Office
Telephone Number: O31-260 8350
Email address: HssrecHumanities@ukzn.ac.za

Appendix 4: Interview schedule for University Librarians (Library heads)

Demographic Information:

Name of the library:----------

Age:----------

Gender:----------

Qualification:----------

Length of service in the profession:----------

Length of service in your present library:----------

1. How skilful are the librarians in the use of computer technology?

   ---

2. What kind of training does your library provide to librarians on ICT skills?

   ---

3. After attending training or conferences, do you expect librarians to share knowledge and skills with their colleagues?

   If yes in question 3 above,

   How do you want them to share the knowledge?

   ---

4. In what way has the ICT improve knowledge sharing in your library?

   ---

5. What capacity has ICT skills enhance service delivery in your library?

   ---

6. What are the reward incentives available in knowledge sharing in your library?

---

7. What methods do librarians use to share knowledge in your library?

---

8. How effective is the method used in knowledge sharing?

---

9. What ICT infrastructures are in place to improve librarians' knowledge sharing?

---

10. Does your library have policy for knowledge sharing?

---

11. Please provide any suggestions on how knowledge can be shared among librarians so as to enhance team work and job productivity

---

Thank You.

Quadri, Ganiyu Oluwaseyi

Appendix 5: Introduction Letter (FUTA)

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

The University Librarian,
Federal University of Technology, Akure
Ondo State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 6: Gatekeepers Letter (FUTA)

THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

OFFICE OF THE UNIVERSITY LIBRARIAN

University Librarian:
Dr Belau Olatunde Gbadamosi
B.Ed (Educ Mgmt/Geoog), M.L.S, Ph.D (Ibadan): CCS, CLN)

P.M.B. 704, Akure,
Ondo State – Nigeria
Tel: 08066205935, 08027079797
E-mail: ulibrarian2006@yahoo.co.uk
librarian@futa.edu.ng
tundeseyi58@gmail.com
Futa Website: www.futa.edu.ng
Futa Library Website:
www.futa.ng/administration/library.php

Dr Francis Garaba
Ph.D Information Studies Programme
University of Kwazulu-Natal,
Yakwasulu-Natali,
South-Africa.

RE: INTRODUCING MR. GANIYU OLUWASEYI QUADRI, Ph.D STUDENT AT UNIVERSITY OF KWAZULU NATAL

With reference to the above subject matter, I write to acknowledge your request. Mr. Ganiyu Oluwaseyi Quadri's readiness to carry out research study using our University Library as research station is equally noted.

In the light of this, the University Library is hereby oblige to accommodate him in the course of his study.

Please, a`ccept the assurances of the highest regards from the University Library.

Thank you.

Dr B.O Gbadamosi
University Librarian

Appendix 7: Introduction Letter (FUNAAB)

The University Librarian,
Federal University of Agriculture,
Abeokuta, Ogun State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

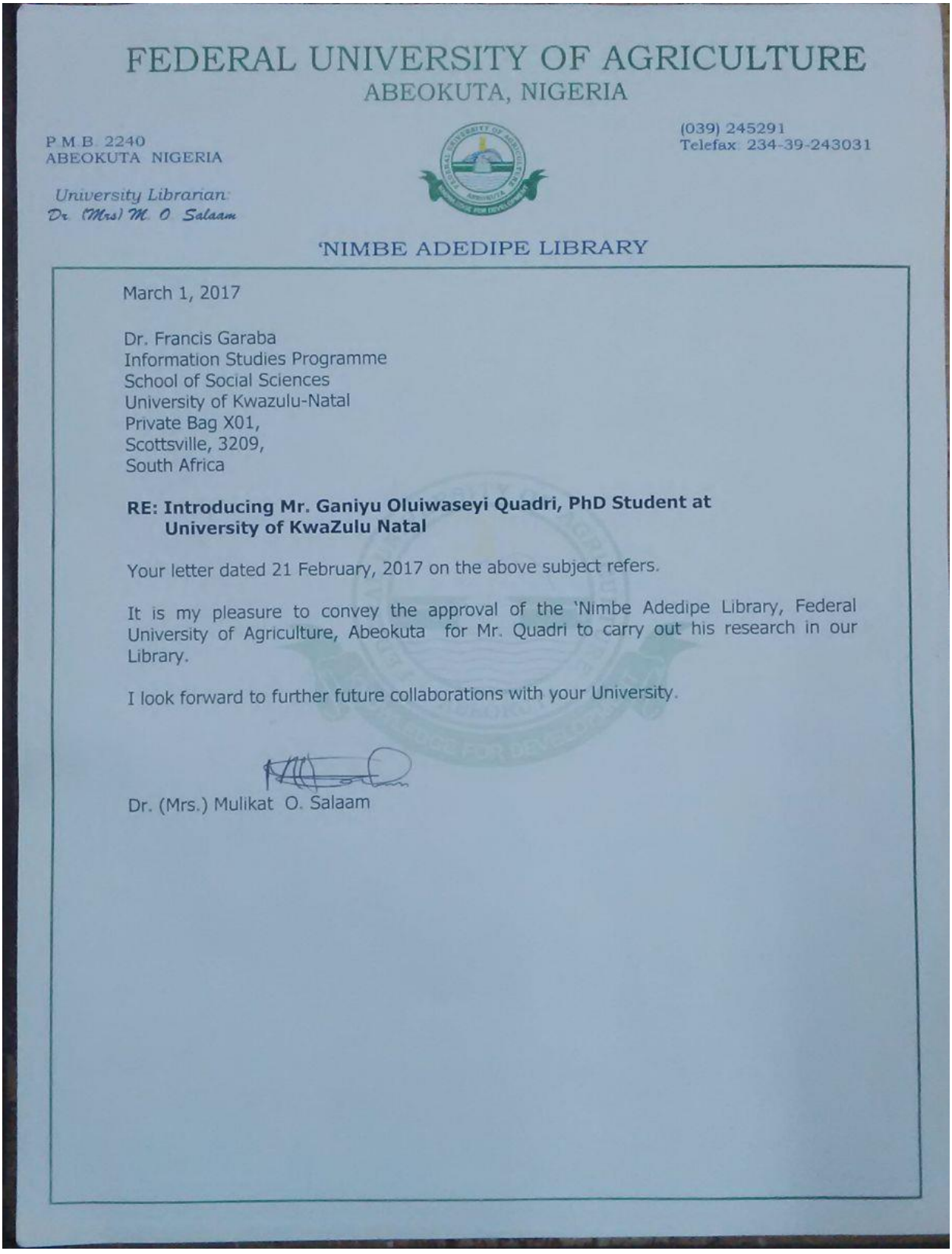
This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 8: Gatekeepers Letter (FUNAAB)



FEDERAL UNIVERSITY OF AGRICULTURE
ABEOKUTA, NIGERIA

P.M.B. 2240
ABEOKUTA NIGERIA

(039) 245291
Telefax: 234-39-243031

University Librarian:
Dr. (Mrs) M. O Salaam

'NIMBE ADEDIPE LIBRARY

March 1, 2017

Dr. Francis Garaba
Information Studies Programme
School of Social Sciences
University of Kwazulu-Natal
Private Bag X01,
Scottsville, 3209,
South Africa

RE: Introducing Mr. Ganiyu Oluiwaseyi Quadri, PhD Student at University of KwaZulu Natal

Your letter dated 21 February, 2017 on the above subject refers.

It is my pleasure to convey the approval of the 'Nimbe Adedipe Library, Federal University of Agriculture, Abeokuta for Mr. Quadri to carry out his research in our Library.

I look forward to further future collaborations with your University.

Dr. (Mrs.) Mulikat O. Salaam

Appendix 9: Introduction Letter (OYE)

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

The University Librarian,
Federal University Oye,
Oye, Ekiti State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 10: Gatekeepers Letter (OYE)

FEDERAL UNIVERSITY OYE-EKITI
OFFICE OF THE LIBRARIAN
Federal University Oye-Ekiti, Ekiti State, Nigeria.
Tel: 08033955102
E-mail: adiojohn@yahoo.co.uk, gboyega.adio@fuoye.edu.ng
Website: www.fuoye.edu.ng

Dr. Gboyega Adio
University Librarian

14th March, 2017

Ganiyu Oluwaseyi Quadri
Information Studies
University of Kwazulu-Natal
South Africa.

RE-INTRODUCTION OF MR. GANIYU OLUWASEYI QUADRI, PH.D STUDENT AT UNIVERSITY OF KWAZULU-NATAL

I write to acknowledge the receipt of your letter dated 21st February, 2017 on the afore-mentioned subject matter.

I am pleased to inform you that we are prepared to assist you to successfully administer your Ph.D research findings in our University.

We therefore look forward to welcoming you anytime you choose to come.

Thank you.

Dr. Isaac O. Busayo
For: University Librarian

.....Innovation & character for national transformation

Appendix 11: Introduction Letter (UI)

The University Librarian,
University of Ibadan,
Ibadan, Oyo State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 12: Gatekeepers Letter (UI)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

Office of the University Librarian
KENNETH DIKE LIBRARY

University Librarian:
HELEN O. KOMOLAFE-OPADEJI, B.A; MLS. (Ib.) PhD.(Babcock)

Telephone: IBADAN (02) 8101100-8101119
Mobile08023255743
Direct Lines: (02) 8103118
Fax: (02) 8103118
E-mail: librarian@mail.ui.edu.ng

13th March, 2017.

Ganiyu Oluwaseyi Quadri
Information Studies
University of Kwazulu-Natal
South Africa.

RE: INTRODUCING MR. GANIYU OLUWASEYI QUADRI, PH.D STUDENT AT UNIVERSITY OF KWAZULU-NATAL

I am pleased to convey approval and permission to you to carry out research in the Kenneth Dike Library, University of Ibadan.

Thank you.

Dr. Helen O. Komolafe-Opadeji
University Librarian

Our Vision:
To be a world-class institution for academic excellence geared towards meeting societal needs.

Our Mission:
To expand the frontiers of knowledge through provision of excellent conditions for learning and research.
To produce graduates who are worthy in character and sound judgement.
To contribute to the transformation of society through creativity and innovation.
To serve as a dynamic custodian of society's salutary values and thus sustain its integrity.

Appendix 13: Introduction Letter (UNILAG)

The University Librarian,
University of Lagos,
Lagos State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

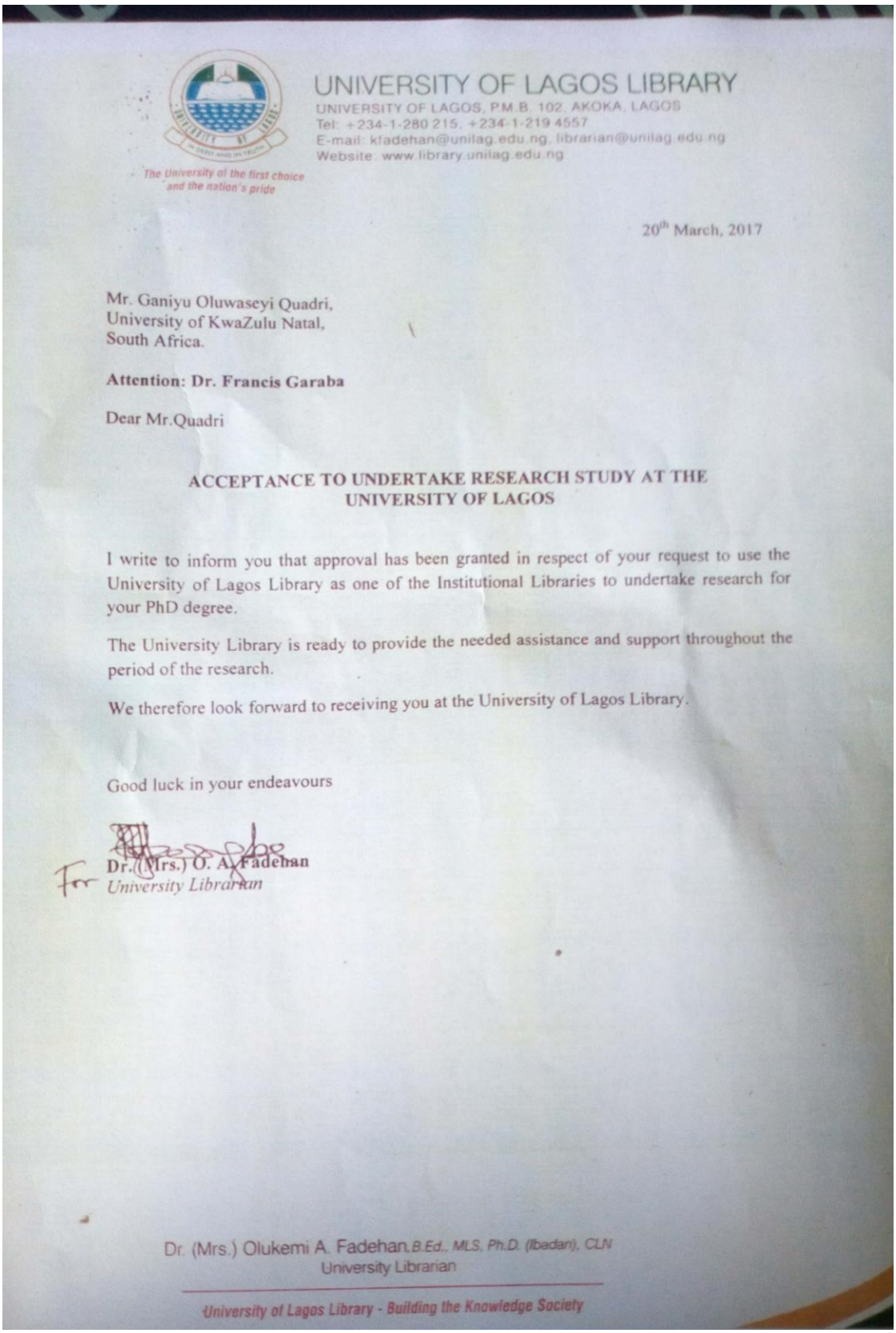
This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 14: Gatekeepers Letter (UNILAG)



UNIVERSITY OF LAGOS LIBRARY

UNIVERSITY OF LAGOS, P.M.B. 102, AKOKA, LAGOS
Tel: +234-1-280 215, +234-1-219 4557
E-mail: kfadehan@unilag.edu.ng, librarian@unilag.edu.ng
Website: www.library.unilag.edu.ng

The University of the first choice and the nation's pride

20th March, 2017

Mr. Ganiyu Oluwaseyi Quadri,
University of KwaZulu Natal,
South Africa.

Attention: Dr. Francis Garaba

Dear Mr.Quadri

ACCEPTANCE TO UNDERTAKE RESEARCH STUDY AT THE UNIVERSITY OF LAGOS

I write to inform you that approval has been granted in respect of your request to use the University of Lagos Library as one of the Institutional Libraries to undertake research for your PhD degree.

The University Library is ready to provide the needed assistance and support throughout the period of the research.

We therefore look forward to receiving you at the University of Lagos Library.

Good luck in your endeavours

For **Dr. (Mrs.) O. A. Fadehan**
University Librarian

Dr. (Mrs.) Olukemi A. Fadehan, *B.Ed., MLS, Ph.D. (Ibadan), CLN*
University Librarian

University of Lagos Library - Building the Knowledge Society

Appendix 15: Introduction Letter (IFE)

The University Librarian,
Obafemi Awolowo University,
Ile-Ife, Osun State,
Nigeria.
21th February, 2017.

RE: Introducing Mr Ganiyu Oluwaseyi **Quadri**, PhD Student at University of KwaZulu Natal

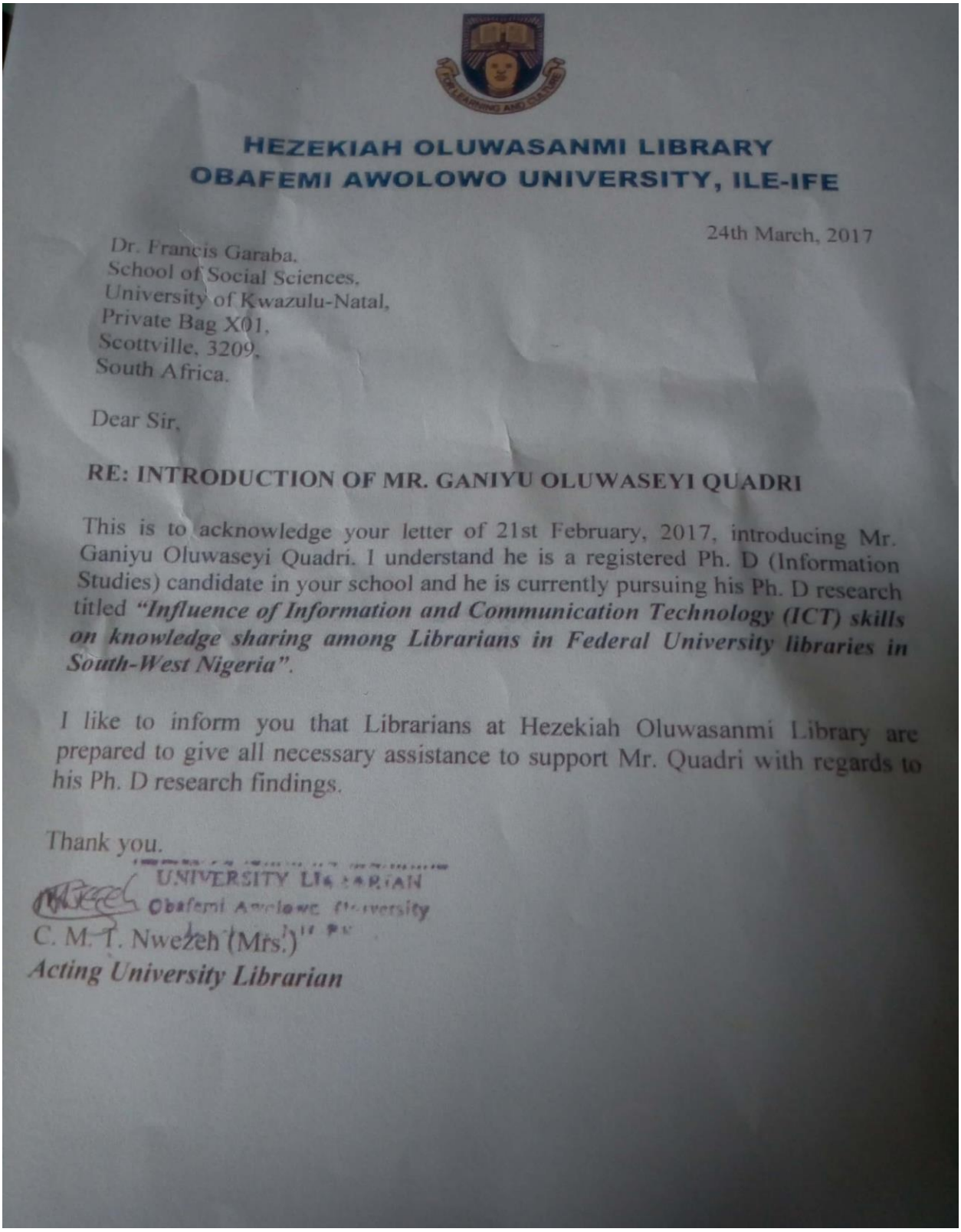
This letter serves to introduce and confirm that Mr Quadri is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of her PhD research is "Influence of information and communication technology (ICT) skills on knowledge sharing among librarians in federal university libraries in South-West Nigerian". The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him 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 Mr Quadri permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Dr. Francis Garaba

PhD (Information Studies Programme)

Appendix 16: Gatekeepers Letter (IFE)



HEZEKIAH OLUWASANMI LIBRARY
OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE

24th March, 2017

Dr. Francis Garaba,
School of Social Sciences,
University of Kwazulu-Natal,
Private Bag X01,
Scottville, 3209,
South Africa.

Dear Sir,

RE: INTRODUCTION OF MR. GANIYU OLUWASEYI QUADRI

This is to acknowledge your letter of 21st February, 2017, introducing Mr. Ganiyu Oluwaseyi Quadri. I understand he is a registered Ph. D (Information Studies) candidate in your school and he is currently pursuing his Ph. D research titled ***"Influence of Information and Communication Technology (ICT) skills on knowledge sharing among Librarians in Federal University libraries in South-West Nigeria"***.

I like to inform you that Librarians at Hezekiah Oluwasanmi Library are prepared to give all necessary assistance to support Mr. Quadri with regards to his Ph. D research findings.

Thank you.

UNIVERSITY LIBRARIAN
Obafemi Awolowo University

C. M. T. Nwezeh (Mrs.)
Acting University Librarian

Appendix 17: Ethical Clearance

14 September 2017

Mr Ganiyu O Quadri 216015523
School of Social Sciences
Pietermaritzburg Campus

Dear Mr Quadri

Protocol reference number: HSS/1386/017D
Project title: Information and Communication Technology (ICT) Skills on knowledge sharing among Librarians in Federal University Libraries in South-West, Nigeria.

Expedited Approval

In response to your application dated 04 August 2017, 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

.....

pp **Dr Shenuka Singh (Chair)**

/px

cc Supervisor: Dr Francis Garaba
cc Academic Leader Research: Prof M Naidu
cc 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

Appendix 18: Editors' Letter (Chapter 1)

SLS Proofreading & Editorial Services

233 Brand Road, Glenwood. Durban, 4001. KwaZulu-Natal, South Africa.
Email: lukongstella@gmail.com | shulikal@ukzn.ac.za | Office: +27 33 3605 841 |
Mobile: +27 78 0664 553 | +27 72 4432 406

30th Day of August 2017

Quadri Ganiyu Oluwaseyi Department Information Studies College of Humanities University of KwaZulu-Natal Pietermaritzburg, South Africa.

Dear Quadri

CERTIFICATION OF ENGLISH LANGUAGE EDITING

This document certifies that **Chapter One** of the thesis titled **"Information and Communication Technology Skills on Knowledge Sharing among Librarians in Federal University Libraries in South West Nigeria"**, has been thoroughly edited for correct English language usage, syntax, spelling, punctuation, and overall style. Where meaning is not explicit or clear, the sentence or paragraph has been marked for the author's attention. The author's ideas, research content, and context of the thesis were not altered during the editing process.

SHULIKA Lukong Stella

Appendix 19: Editors' Letter (Chapter 2)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

17 February, 2018.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER TWO OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter two of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

Appendix 20: Editors' Letter (Chapter 3)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

17 May, 2018.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER THREE OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter three of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

Appendix 21: Editors' Letter (Chapter 4)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

28 July, 2018.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER FOUR OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter four of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

Appendix 22: Editors' Letter (Chapter 5)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

22 October, 2018.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER FIVE OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter five of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

Appendix 23: Editors' Letter (Chapter 6)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

24 June, 2019.

Dr Francis Garaba,
Department of Information Studies,

School of Social Science

University of Kwazulu-Natal,

South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER SIX OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter six of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

Appendix 24: Editors' Letter (Chapter 7)

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
☎ +234-8062119697
+234-8050979843

E-mail:
sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

19 August, 2019.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON CHAPTER SEVEN OF MR GANIYU OLUWASEYI QUADRI'S PhD THESIS

I write to certify that chapter seven of the PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ENGLISH

ADESINA B. SUNDAY, PhD
+234-8062119697
+234-8050979843

E-mail: sinadaybuk@yahoo.com
sinadaybuk@gmail.com
ab.sunday@mail.ui.edu.ng

10 April, 2020.

Dr Francis Garaba,
Department of Information Studies,
School of Social Science
University of Kwazulu-Natal,
South Africa.

Dear Dr Garaba,

EDITORIAL CERTIFICATION ON REVISED PhD THESIS OF MR GANIYU OLUWASEYI QUADRI

I write to certify that revised PhD thesis of Mr Ganiyu Oluwaseyi Quadri was edited by me.

Thank you.

Yours faithfully,

Dr A.B. Sunday.