COVER PAGE

UNDERSTANDING MARGINAL USE AND ABSOLUTE NONUSE OF DIGITAL LIBRARY RESOURCES AND SERVICES BY FACULTY MEMBERS IN AHMADU BELLO UNIVERSITY ZARIA, NIGERIA

BY

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ZARIA, NIGERIA

JULY, 2017

TITLE PAGE

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JULY, 2017

DECLARATION

I hereby declare that the work in this thesis entitled "Understanding Marginal Use and Absolute Nonuse of Digital Library Resources and Services by Faculty Members in Ahmadu Bello University, Zaria, Nigeria" has been carried out by me in the Department of Library and Information Science. The information derived from the literature has been duly acknowledged in the text by list of references. No part of this thesis was previously presented for another degree or diploma at this or any other Institutions.

_____	_____	_____
Name	Signature	Date

CERTIFICATION

This thesis entitled UNDERSTANDING THE MARGINAL USE AND ABSOLUTE NONUSE OF DIGITAL LIBRARY RESOURCES AND SERVICES BY FACULTY MEMBERS IN AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA by Monsurat Funmilola MOHAMMED meets the regulations governing the award of the degree of Doctor of Philosophy in Library and Information Science, Ahmadu Bello University and is approved for its' contribution to knowledge and literary presentation.

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DEDICATION

This thesis is dedicated to my late father, Alhaji Ibrahim Folaranmi Aro, may Almighty Allah grant him Paradise.

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LIST OF ABBREVIATIONS

ABU:	Ahmadu Bello University
ABUTH:	Ahmadu Bello University Teaching Hospital
AGORA:	Access to Global Online Research Agriculture
ASCII:	American Standard Code for Information Interchange
DISS:	Digital Information Sources and Services
DLRS:	Digital Library Resources and Services
DOI:	Diffusion of Innovation
EIS:	Electronic Information Sources
FGD:	Focus Group Discussion
HIB:	Human Information Behaviour
HINARI:	Health InterNetwork Access to Research Initiative
ICTs:	Information and Communication Technologies
IR:	Institutional Repository
IRC:	Internet Relay Chat
KIL:	Kashim Ibrahim Library
LAN:	Local Area Network
LIS:	Library and Information Science
MODEM:	MOdulation DEModulation
MLS:	Modern Library Services
MTN:	Mobile Telecommunication Network
OARE:	Online Access to Research in the Environment
OPAC:	Online Public Access Catalogue

PAIT:	Perceived Attribute of Innovation Theory
PC:	Personal Computers
SMS:	Short Message Services
SMTP:	Simple Mail Transfer Protocol
SSRN:	Social Science Research Network
TCP/IP:	Transport Control Protocol /Internet Protocol
TEEAL:	The Essential Electronic Agricultural Library
TLS:	Traditional Library Services

ABSTRACT

Universities in Nigeria have invested in Digital Library Resources and Services (DLRS) so that staff and students can have access to them irrespective of their location. However, these resources and services are not being exploited to the fullest by Faculty Members in Ahmadu Bello University (ABU) Zaria, thereby making the University not to have returns on the investment made. This study sought to explore the reasons for the nonuse of DLRS by Faculty Members in ABU. To achieve the objectives of this study, six research questions were raised, amongst which were; what are the reasons for the nonuse of DLRS by Faculty Members in ABU and how does the constructs of PAIT explain the experiences of Faculty Members in ABU on the nonuse of DLRS. A qualitative research method using a case study research design was used to have an in depth understanding of the situation at hand. Data were collected through Focus Group Discussion and in depth interview. Multiple variation sampling technique was used to select three faculties from three different campuses in ABU; Faculty of Administration, Congo Campus, Faculty of Social Science, Samaru Campus and Faculty of Medicine ABUTH Shika. Also, Purposive sampling technique was used to select participants for the study. However, twelve recorded voices were used for analysis at saturation stage. The analysis was done using qualitative content analysis. The findings amongst others were; the reason for nonuse of DLRS by Faculty Members in ABU were lack of communication of DLRS available and how it can be used and lack of hospitality on the part of the librarian. Relative advantage and trialability were the main constructs of PAIT that explained the experiences of Faculty Members in ABU on the nonuse of DLRS in KIL. The study therefore concluded that lack of return on investment caused by nonuse of DLRS by Faculty Members can be curbed by improving on both the human and capital resources for the full exploration and use of available DLRS in KIL. It is therefore recommended amongst others that library management should take proactive measures on marketing of DLRS and training users on what to do and how to use DLRS. Librarians should consider hospitality principles and practices as they discharge their duties so that a higher level of awareness and increased utilization of DLRS by Faculty Members in ABU can be achieved and address the challenges of nonuse and the lack of return on investment experienced over the years.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A university is an institution of higher education and research which grants academic degrees in various academic disciplines. It is established to educate for life through the acquisition of a professional expertise. The basic goal of university education is to produce graduates whose training in tradition will enable them to deal with the increasing specialized problems in a society and those intellectual accomplishments and mental perspective that will prepare them to operate on a more encompassing level outside their areas of specialization (Owolabi, Ajiboye, Lawal and Okpe, 2012). University comprised of administrative and academic units. Academic units have trio objectives: teaching, learning and research. One academic unit in universities is the university library.

University library is regarded as the heart of university; it supports teaching, learning and research. University library essentially provide two services: Behind the scene services and user services. Behind the scene services are to aid the accessibility to information resources e.g cataloguing, classification and selection while user services deals with the provision of services to users such as provision of scholarly literature, such as books, journals, documents, and informational resources in printed, digital, and other formats like as provision of user education services and selective dissemination of information service

Over the last decades, there has been proliferation, diffusion, adoption, and use of ICT in university libraries which has transformed the way they provide services. University libraries are transforming into smart organizations providing digital services where e-books, e-journals and e-

magazines have replaced the printed physical information resources and services (Abinew and Vuda, 2013; Akpojotor, 2016). The transformation of university libraries into virtual libraries have dramatically altered how information is accessed, stored, retrieved and disseminated in universities.

In order to move with this global trend in ICT, universities have made significant investment in acquiring digital technologies with the sole objective of making available Digital Information Sources and Services (DISS) where users can access information 24/7 regardless of time and space for improved quality teaching, learning and research. DISS are those information sources and services which are accessible to users remotely through digital technology. DISS refer to electronic representation of information which can be accessed via electronic system and computer networks (Johnson, Evensen, Gelfand, Lammer, Sipe & Zilper (2012). Examples of DISS are e-books, digital libraries resources and services, online journal and magazines, e-learning tutors, online tests, Internet, web technology, e-discussions, e-news, data archives, e-mail and chatting

The diffusion of DISS has permeated university libraries where librarians provide Digital Library Resources and Services (DLRS). DLRS refer to electronic resources and services provided by libraries which users can access locally or remotely via digital technology. Examples of these resources and services are: library website, online library catalog, on-line reference materials, online databases, electronic magazine and journals, electronic books and online librarian question services. The importance of DLRS has been highlighted: enable rapid access to information, digital information can be copied and stored for preservation on right of access. Most importantly, information in digital content can easily be retrieved or accessed. However, despite the importance of DLRS and the huge sum of money invested in DLRS, the problem of

nonuse of DLRS in libraries is a re-occurring feature especially in Nigeria (Mortenson Centre for International Library Programme, University of Illinois, 2005; Bashorun, Isah and Adisa, 2011; McCreadie, 2013). DLRS cannot be successful unless it is used effectively (Atilgan and Bayram, 2006) and in order to be able to make optimal use of DLRS, users are expected to be acquainted with the use of technology to acquire digital information hence, the need for users to be familiar with DISS.

In view of the above, the researcher is interested in identifying the causal factors responsible for the marginal use and absolute nonuse (duo-marginal use and absolute nonuse make up nonuse as was discussed in the study) of DLRS by Faculty Members in ABU and to explain the reasons for nonuse using Rogers (2003) Perceived Attribute of Innovation Theory (PAIT). In order to achieve this, the researcher required background information in relation to experiences of Faculty Members' use of DISS and infrastructural facilities in accessing them as DISS are becoming more important for the academic community (Egberongbe, 2011).

Digital Library Resources and Services as an Innovation

To achieve the numerous objectives of a university library, the library provides two forms of services: Traditional Library Services (TLS) and Modern Library Services (MLS). The TLS is characterized by the following according to Bamgbade, Akintola, Agbenu, Ayeni, Fagbami, and Abubakar (2015):

1. Emphasis on storage and preservation of physical items, particularly books and periodicals
2. Cataloguing at a high level rather than one detail e.g author and subject indexes as opposed to full text

3. Browsing based on physical proximity related materials e.g books on a subject near one another on the shelves
4. Users must travel to the library to learn what is there and make use of it

In contrast, MLS has the following characteristics:

The above characteristics of MLS qualified it to be referred to as digital library. Most of today's libraries are characterized by the above. However, libraries are traditionally viewed as collectors of resources for students, faculty and public use. Compared to many innovative organizations, libraries are perceived as structured institutions that are slow to change (Drotner, 2005). However, this is one of the long-term misunderstandings of libraries. As we move into an information society, libraries have shifted their focus from concentrating on resources supply to knowledge creation facilitator and enabler (Swain, 2009). In other words, today's libraries aim to improve the whole society through promoting knowledge creation and distribution. In correspondence with these trends, libraries have now taken the initiative in innovative practices in order to meet the needs of their new role by investing in Information and Communication Technologies (ICTs).

Due to the advances in ICTs such as the enormous increase in Internet-based communication, attention has been shifted to the virtual, rather than the physical library. This has also extended the abilities through which libraries communicate with users: it redefines the way that libraries deliver their services, content as well as the format (Swain, 2009). Users are expecting more accurate, qualified and immediate responses from libraries, which also drive libraries to change in order to provide better experience and services. For the university library to achieve this, there is need for appropriate resources and services that are dedicated to the advancement of knowledge and its practical application to the needs of the modern society. Thus, digital library

is gradually taking over the traditional way of accessing the library. Hence the need to consider DLRS as an innovation in university libraries because it is a phenomenon and practice that is professed by many as new.

An innovation can be described as any idea, object or practice that is perceived as new. Studies have shown that innovations are not easily accepted, used and diffused in a society due to the fact that human being are not easily susceptible to changes (Hall, 2002; Nanda and Warms, 2010; Chen, n.d). However theories have indicated how innovations can easily diffuse in a society. One of the prominent theories of innovation is that by Rogers (1995) which states that for innovation to diffuse, it must be communicated through certain channels over time among the members of a social system. Rogers propounded a unified theory of diffusion of innovation where he presented four of the most widely used theories of diffusion namely; Innovation Decision Process Theory; Individual Innovativeness Theory; rate of adoption theory and Perceived Attributes of Innovation Theory. Among the four theories by Rogers, Perceived Attribute of Innovation Theory (PAIT) is considered suitable to investigate nonuse of DLRS. The usefulness of PAIT is mainly to explain the rates of adoption and diffusion of an innovation. The critical role of the attributes of innovation theory in the acceptance and use of innovation has been documented (Almobarraz, 2007; Eljiz, Dadich, Hayes, Fitzgerald, Sloan and Kobilski, 2010; Stachewicz, 2011; Neo and Calvert, 2012; Ntemana and Olatokun, 2012). Many successful innovative services in health, agriculture, and education are designed according to the attributes of innovation theory. Therefore, for innovative services to be effectively and efficiently diffused, adopted, and used it must conform to the attributes of innovation theory (Rogers, 2003). Hence, the PAIT is appropriate for exploring issues related to nonuse.

Digital Library Resources and Services in Kashim Ibrahim Library, Ahmadu Bello University, Zaria

Ahmadu Bello University (ABU), Zaria has invested a huge sum of money in providing DLRS to staff and students so as to improve the quality of teaching, learning and research. An estimated sum of 85 million Naira is spent on ScienceDirect subscription annually. An offline resource, "The Essential Electronic Agricultural Library" (TEEAL) cost 5 thousand USD plus an update fee of 5 hundred USD per year (Office of the University Librarian, Ahmadu Bello University, Zaria). In the same vein, digitization of theses and dissertations for Institutional Repository (IR) and the digitization machines came with a cost, so also are the installation of fiber optic cables as backbone for network communication, installation of routers for wireless connection in all departments and the development of website for accessing DLRS. All these expenses are incurred with the aim that students and staff can gain access to DLRS irrespective of their location for improved teaching, learning and research. Some of the DLRS are accessible locally in Kashim Ibrahim Library and remotely via the university website.

Kashim Ibrahim Library (KIL) is the main university library of Ahmadu Bello University, Zaria. Its purpose is to support teaching, learning and research and the literary information needs of the entire university community. Prominent roles played by the library include: acquiring, processing and lending information resources and responding to patron's enquiries. To improve services to clients, ABU has invested huge sums of money to ensure the digitization of library resources, services and upgrading the IT skills of staff to enable them cope with the challenges of proficiency in the information age in the following areas:

1. The design and deployment of a web site which facilitates access to open access, free web page and licensed databases such as EBSCOHOST, ScienceDirect , HINARI and so on.
2. The training and retraining of its staff with relevant ICT skills to ensure sustainability and maintenance of the digital library resources and services.
3. The provision of inverter and solar panel to ensure the continuous uninterrupted access to digital services.
4. The acquiring of large bandwidth that will allow the most effective access to educational resources on the Internet with the support of the university management.
5. In collaboration with donor agencies like Mac-Arthur Foundation and Carnegie Corporation, digitization equipment such as scanners, server, and computers for creating an Institutional Repository have been put in place.
6. Dspace Institutional Repositories (IR) to provide access to electronic resources such as theses and dissertations.

From the foregoing, there is no doubt that facilities and strategies have been put in place by the university management to encourage effective use of DLRS in the university. The DLRS provided by the university include:

1. Offline resources: Offline resources are being managed by the CD ROM Search Unit. The e-resources housed there include LANTEEAL (Local Area Network The Essential Electronic Agricultural Library), E- Granary, DATAD (Databases of African Thesis and Dissertations), Encarta and other CD collections.
2. Online databases: These are grouped into open access and subscription databases. Examples of open access include Directory of Open Access Journals (DOAJ), Directory

of Open Access Books (DOAB) and African Journal On Line (AJOL) while the subscription database are scienceDirect, Hinari, Agora, Oare, JstoR, BioOne etc

3. Institutional Repositories (IR): The University IR is used to manage the local content produced by postgraduate students and academic staff of the university. Documents are digitized and uploaded into the university IR. Documents like theses, dissertations, seminar and conference papers, and pre-print and post print journal articles are housed here.
4. Ask the librarian: this is another avenue through which users get in contact with the library. This is done either through phone calls or e-mails. Presently, there are Ask the reference librarian and Ask the circulation librarian.
5. Online Public Access Catalogue (OPAC).This service is meant to provide remote access to the library collection. With OPAC, you need not come to the library physically to know what is in its collection.
6. Media services: the non-print resources that accompany books and journals are managed here Other activities performed here include Audio and Video Services, E-adverts and DSTV
7. MTN e-library: ABU in collaboration with Mobile Telecommunication Network (MTN) provides on-line databases different from the one available in KIL

1.2 Statement of the Problem

Universities in Nigeria have invested in Digital Library Resources and Services and associated computer based technologies so that their users can have access to the services without restriction to time and geographic location in order to encourage and improve quality teaching, learning and research. Unfortunately, these universities are losing huge sums of money due to the

nonuse of DLRS (MCILP, University of Illinois, 2004; McCreadie, 2013). Several studies have found out that there is generally nonuse of these services by Faculty Members (Osinulu, 1998; Torina & Vakkari, 2004; OCLC, 2005; Lesk, 2005; Brown and Swan, 2007; Harley, 2007; Popoola, 2008; Buer, 2009; Harle, 2010; Ifijeh 2011, Bashorun, Isah and Adisa, 2011; Creaser and Spezi, 2012 and McCreadie, 2013) and specifically in ABU (Mohammed, Ukashatu and Adamu, 2014). To improve the nonuse of DLRS, scholars have explored the issue from different perspectives: lack of awareness (Osinulu, 1998; Torina & Vakkari, 2004; OCLC, 2005; Brown and Swan, 2007; Popoola, 2008; Harle, 2010; Ifijeh 2011, Creaser and Spezi, 2012; McCreadie, 2013; Mohammed, Ukashatu and Adamu, 2014), design factor, insufficient promotion and communication of what is available, partly due to the complexities of online access and multiple entry routes (Lesk, 2005; Harle, 2010) and incompatibility with Faculty Members pedagogies (Harle, 2007). However, these studies were presented without the use of theoretical framework. While the studies have helped to provide better understanding of the issues of nonuse of DLRS, they did not approach the issue from the theoretical perspective, specifically from DLRS as an innovation.

Several studies have identified the process of enhancing the acceptance of products and services from the perspective of innovation (Almobarraz, 2007; Chigona and Licker, 2008; Eljiz *et al.*, 2010; Stachewicz, 2011; Neo and Calvert, 2012; Ntemana and Olatokun, 2012). They confirmed that no matter how well an innovation is designed, it would be perceived as useless if it is not adopted. These authors have also advocated that, for innovations to be adopted and used, they must conform to the Perceived Attributes of Innovation Theory (PAIT) whose constructs are: relative advantage, compatibility, complexity, trialability and observability hence, the need to consider DLRS as an innovation. The utilization of this theoretical framework for this study

would help to provide better understanding of the reasons for the nonuse of DLRS by Faculty Members in ABU. This study therefore sets out to investigate, using PAIT, the nonuse of DLRS by Faculty Members in A.B.U Zaria.

1.3 Research Questions

To address the problem statement and to achieve the objectives of this study, the research questions guiding this study are:

1. What are the experiences of Faculty Members in ABU on the use of Digital Information Sources and Services?
2. What infrastructural facilities do Faculty Members in ABU use to access Digital Information Sources and Services?
3. What are the experiences of Faculty Members about the infrastructural facilities provided by ABU to access Digital Information Sources and Services?
4. What are the Digital Library Resources and Services that Faculty Members in ABU aware of?
5. What are the reasons for the nonuse of Digital Library Resources and Services by Faculty Members in ABU?
6. How do the constructs of PAIT explain the experiences of Faculty Members in ABU on the nonuse of Digital Library Resources and Services?

1.4 Objectives of the Study

The overall objective of the study is to understand the reasons for nonuse of Digital Library Resources and Services by Faculty Members in ABU Zaria. Specifically, the objectives of the study are to:

1. Investigate the experiences of Faculty Members in ABU on the use of Digital Information Sources and Services.
2. Find out the infrastructural facilities Faculty Members in ABU use to access Digital Information Sources and Services.
3. Find out the experiences of Faculty Member about infrastructural facilities provided by ABU to access Digital Information Sources and Services.
4. Find out the Digital Library Resources and Services Faculty Members are aware of in KIL, ABU?
5. Find out the reasons for nonuse of Digital Library Resources and Services by Faculty Members in ABU
6. Determine the constructs of PAIT that explains the experiences of Faculty Members in ABU on the nonuse of Digital Library Resources and Services?

1.5 Significance of the Study

PAIT could be a valuable tool for librarians and information professionals working to increase the utilization of product and services especially when the products and services are designed using the constructs, this could help in the recognition of weaknesses and their remedies necessary to improve digital products or services offered in the library.

The findings shall contribute to a deeper understanding of ABU Faculty Members' perceptions of using DLRS thereby aiding change agents and agencies in ABU in planning a successful nation-wide diffusion campaign to ensure that all Faculty Members not only adopt, but more importantly, apply DLRS in carrying out their research and teaching. With the increase in the use

of DLRS in ABU, there can be return on investment made on DLRS by the university management.

Faculty Members can also benefit from the findings of this study as it will create awareness of all the DLRS that are available in the library through proper marketing and how they can be optimally used to fulfill the objectives of teaching and research. In addition, it can serve as an eye opener for researchers in Nigeria whose aim is to promote and increase the utilization of an innovation.

1.6 Scope and Delimitation of the Study

Faculty Members in ABU were the subject for this study. The content area was marginal use and absolute nonuse of DLRS. The DLRS are: Offline resources, Online databases, Institutional Repositories, Ask the librarian, Online Public Access Catalogue (OPAC), Media services and MTN e-library. The theoretical framework that guided the study is Rogers' PAIT. The characteristics are: Relative advantage, compatibility, complexity, trialability, observability. The study did not capture other academic staffs of ABU that engage in teaching and research as part of the participants for the study because the researcher is more interested in Faculty Members' similar characteristics in terms of ranks and promotion.

1.7 Operational Definition of Terms

The following terms are defined operationally to ease their understanding and usage in this study:

Faculty Member: a scholar, educator and researcher who is skilled in academic disputation in the university ranging from the rank of an Assistant Lecturer to a Professor

Nonuse: having knowledge about DLRS but rarely (marginal use) or do not use at all (absolute nonuse).

Infrastructural facilities: referred to those infrastructures users directly use to access the DISS such as Fiber optic/LAN cable, router/wireless connection, personal modem and computers.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This study used a theoretical framework; therefore, this chapter is thereby presented under the following sections:

2.2 The Concept of Nonuse

2.3 Research Paradigm

2.4 Meta Theories for Studying Nonuse of Information

2.5 Theoretical Framework

2.6 Previous Studies that Adopted PAIT

2.7 Summary of the Review

2.2 The Concept of Nonuse

Literarily, nonuse is having the knowledge about something and not using it. However, nonuse is difficult to define because scholars attested that nonuse have different forms thereby necessary to clarify and provide answer to the question -nonuse of what? In the context of the present study, nonuse of DLRS implies having the right to use the DLRS but not doing so at all or over a specific period/or for a specific sample of collection or transactions. Nonuse of DLRS has been less explored. However, researchers have studied nonuse of technology generally ranging from facebook, Human Computer Interaction, Internet and so on. (Baumer, Adams, Khovanskaya, Liao, Smith, Sosik and Williams, 2013; Birnholtz, 2010; Satchel and Dourish, 2009; Kline, 2003; Wyatt, 2003). These scholars have similar opinions about nonuse having different forms.

Satchel and Dourish (2009) identified six forms attributed to nonuse. These comprise: lagging adoption, active resistance, disenchantment, disenfranchisement, displacement and disinterest. Lagging adoption is defined with respect to some expected pattern of technology adoption and diffusion i.e. the Individual Innovativeness Theory (Rogers, 2003) where nonuse is the adoption wave-front moving from left to right across the adoption bell curve. The users are on the left side of the wave-front and the nonusers on the right. The second form of nonuse which is active resistance is the die-hard within the laggards who steadfastly refuse to adopt a technology in active ways. The third form, Disenchantment is a form of reluctant or partial use associated particularly with nostalgic wistfulness for a world passing out of existence. The fourth, Disenfranchisement form of nonuse is the situation where a particular social group is not granted the right to use a particular kind of technology. The fifth is Displacement which is broadly a second hand use (when the primary use of a technology becomes a service) and disinterest which is the last form is when a technology that is expected to be relevant turns out not to be of significant relevance.

Wyatt (2003) submitted typologies of nonusers into four categories: resisters, rejecters, the excluded, and the expelled. Rejecters and expelled are those who have joined and are now nonusers while resisters and the excluded are those who never used the technology. Sridhar (1994) identified another typology of nonuse in a library context and categorized them into absolute and marginal use. Absolute nonuse is a situation where library or its collections or services are not used at all while marginal use is a situation where the library or its collection or services are rarely used. The result of absolute nonuse and marginal use of library resources and services makes the library underutilized. This is however important in the study of this social phenomenon “nonuse of DLRS”

2.3 Research Paradigm

Research paradigm is a term frequently used in the social sciences. It is a way of examining social phenomena from which particular understandings of these phenomena can be gained and explanations attempted. According to Kuhn (1977), paradigm refers to a research culture with a set of beliefs, values, and assumptions that a community of researchers has in common regarding the nature and conduct of research. A paradigm hence implies a pattern, structure and framework or system of scientific and academic ideas, values and assumptions (Olsen, Lodwick, and Dunlap, 1992). Research paradigm is an all-encompassing system of interrelated practice and thinking that defines the nature of enquiry along three dimensions: ontology, epistemology and methodology.

The term Ontology refers to a branch of philosophy concerned with articulating the nature and structure of the social world and what can be known about it. A key ontological debate concerns whether there is a captive social reality and how it should be constructed. There are three distinct positions in the debate: Realism, Materialism and Idealism (Snape and Spencer, 2003). Realism claims that there is an external reality which exists independent of people's beliefs or understanding about it. Materialism holds that there is a real world but that only material features of that world hold reality. Idealism asserts that reality is only knowable through the human mind and socially constructed meanings. Qualitative researchers vary in their ontological stances but there is a common understanding that the social world is governed by normative expectations and shared understandings. Therefore, the laws that govern it are not immutable (Snape and Spencer, 2003).

Epistemology refers to the nature of the relationship between the researcher (the knower) and the participant. It denotes the nature of human knowledge and understanding that can be acquired

through different types of inquiry and alternative methods of investigation. Snape and Spencer (2003) submitted that epistemology is concerned with the nature of knowledge and how it can be acquired. The main epistemological stances are positivism and interpretivism. Positivism holds that methods of the natural sciences are appropriate for social enquiry because human behaviour is governed by law-like regularities. It also holds that it is possible to carry out independent, objective and value free social research. The opposing view, known as interpretivism claims that natural science methods are not appropriate for social investigation because the social world is not governed by regularities that hold law-like properties. Hence, a social researcher has to explore and understand the social world through the participants' and their own perspectives and explanations can only be offered at the level of meaning rather than cause. Qualitative research is largely associated with interpretivism.

Methodology refers to how the researcher goes about practically finding out whatever he or she believes can be known. The most common classification of methodology is into qualitative and quantitative. Quantitative research methods were developed in the natural sciences to study natural phenomena while qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena. Both quantitative and qualitative research studies are conducted in education but neither of these methods is better than the other; the suitability of the need of any one of them is decided or depends on the context, purpose and nature of the research study in question. This study adopts the qualitative methodology because qualitative research covers a broad range of approaches which are linked to different beliefs about what there is to know about the social world and how to find out about it.

This study adopts the interpretive epistemology using qualitative methodology because the researcher wants to explore and understand the reasons for the nonuse of DLRS by Faculty

Members in ABU from their perspectives and explanations. The justification for using qualitative methodology is further explored in chapter three while interpretivism epistemology is explained below.

2.3.1 Interpretivism Epistemology

The research paradigm adopted for this study is interpretivism epistemology. It is considered ideal for this study because it can be used to conveniently place the specific psychological and sociological theories used in this study. Thomas (2010) asserts that interpretive researchers believe that reality consists of people's subjective experiences of the external world as such; they may adopt an inter-subjective epistemology and the ontological belief that reality is socially constructed. According to Willis (1995) and Walsham (1995), interpretivists believe there is no single correct route or particular method to knowledge Instead they should be judged according to how 'interesting' they are to the researcher as well as those involved in the same areas. Interpretivists attempt to derive their constructs from the field by an in-depth examination of the phenomenon of interest. Gephart (1999) argues that interpretivists assume that knowledge and meaning are acts of interpretation, hence there is no objective knowledge which is independent of thinking, reasoning humans. The premise of interpretive researchers is that access to reality (whether given or socially constructed) is only through social constructions such as language, consciousness and shared meanings (Myers 2009).

Interpretive paradigm is underpinned by observation and interpretation, thus to observe is to collect information about events, while to interpret is to make meaning of that information by drawing inferences or by judging the match between the information and some abstract pattern (Aikenhead, 1997). It attempts to understand phenomena through the meanings that people assign to them (Deetz, 1996). The interpretive paradigm is concerned with understanding the

world as it is from subjective experiences of individuals. It uses meaning (versus measurement) oriented methodologies such as interviewing or participant observation that relies on a subjective relationship between the researcher and the subjects. Interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense making as the situation emerges (Kaplan and Maxwell, 1994). The interpretive approach aims to explain the subjective reasons and meanings that lie behind social action. The interest of interpretivists is not the generation of a new theory, but to judge or evaluate, and refine interpretive theories.

The key words pertaining to interpretivism methodology are participation, collaboration and engagement (Henning, van Rensburg and Smit, 2004). In the interpretive approach the researcher does not stand above or outside, but is a participant observer (Carr and Kemmis, 1986) who engages in the activities and discerns the meanings of actions as they are expressed within specific social contexts. Based on the experiences and explanation of the participants (Faculty Members) on the reason for nonuse of DLRS, the researcher will be able to make sense of the situation based on subjective reasoning. Interpretative paradigm offer a strategy for expressing and discerning the voices, worries, and actions of individuals in particular places (Schwandt, 1994); and has generated several meta theoretical approaches and "premises upon which empirical research and theorizing is based (Tuominen, Talja, & Savolainen, 2005). Several interpretative Meta theoretical paradigms relevant to framing inquiries in LIS are identified in the literature, and are discussed in the next section.

2.4 Meta Theories for Studying Nonuse of Information

Meta theoretical approaches are set of assumptions that orient and direct theorizing about a given phenomenon (Lawler & Ford, 1993). The phenomenon in this study is the Nonuse of DLRS. Accordingly, meta theories offer this researcher a broader conceptual frame for uncovering the

phenomenon of Nonuse of DLRS for subsequent choice of substantive theory. For decades, the value of framing inquiries within meta theoretical frame has been stressed by scholars. For example, Berger, Wagner, and Zelditch (1989) indicate that meta theories are especially useful as clarifying devices. They help answer questions such as: What is the nature of the information context under inquiry? What is the appropriate level of analysis? What are the goals of the investigation? What methods and techniques are effective in reaching these goals? More so, Wagner and Berger (1985) suggest that meta theories promote overall theory growth, providing a framework in which unit theories (theory-data linkages that are empirically testable) can be analyzed and potentially connected.

Rioux (2010) has reviewed the role of meta theories in Library and Information Science (LIS) inquiries. Buttressing the significance of meta theories in LIS inquiries, Bates (2006) suggests that when LIS scholars take up a particular research approach, they should consider the thinking behind the development of their inquiry using meta theories. Bates described meta theory as "… the philosophy behind the theory, the fundamental set of ideas about how phenomena of interest in a particular field should be thought about and researched" (Bates, 2006). Hjorland (2000) also reminds us that LIS is very much influenced by meta theoretical traditions, which may be implicit, explicit, recognized, or unconscious: "The deepest understanding of the field is provided by the study of underlying philosophical assumptions. This is, however, also the most neglected part." He urges the investigation of assumptions, methods, benefits, and drawbacks inherent in these philosophical approaches because these different positions have different implications for the kind of theory and ultimately the kind of practice done in LIS (Hjorland, 2000).

Similar, to Hjorland's, (2002) amplification of the role of paradigm in LIS inquiry, Dervin (1999) consider meta theories as sets of assumptions about the nature of reality and human beings (ontology), the nature of knowing (epistemology), the purposes of theory and research (teleology), values and ethics (axiology); and the nature of power (ideology). Dervin's perspective has placed the role of meta theories in LIS inquiries as "offering a framework for research and for thinking and speaking about phenomena, addressing issues such as being and knowing, the nature of reality, and the values and goals of research and practice." (Riox, 2010)

Examples, of meta theories that are rooted in interpretative paradigm in LIS field are: feminism, critical theory, postmodernism, social constructionisn. Social constructionism is the chosen meta theoretical approach for this study and is hereby discussed below.

2.4.1 Social Constructionism

Among the interpretative meta theories for studying Human Information Behaviour (HIB), a potentially useful one for framing inquiries about the nonuse of DLRS is social constructionism. The choice of social constructionism is based on the belief of the researcher that nonuse of DLRS is grounded in HIB; it is also based on the assumption that designing effective DLRS systems for optimal use by Faculty Members requires an in-depth understanding of the interaction. Additionally, the choice of social consructionism meta theoretical framework is motivated by the need to identify conceptual constructs that has the potential of being applied in designing DLRS for optimal use by Faculty Members to improve scholarly endeavors. Therefore, this thesis about nonuse of DLRS is focused in contributing to improving the use of DLRS among Faculty Members in ABU, using the meta theoretical framework of social constructionism.

This framework is a social approach to the analysis of HIB and has been proven effective in empirical analysis of uncovering in-depth understanding of information behavior such as the Nonuse of DLRS within the context of university setting. A social constructionist perspective is an approach to the study of information in social context. This approach is referred to by Pettrigrew, Fidel, and Bruce (2000) as the social approach to information, which is located within the human information behavior theory. The assumption in using this paradigm is "that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artifacts" (Klein and Myers, 1999). Thus, it makes possible a research design that will give voice to people who do not use DLRS in Ahmadu Bello University Zaria.

Social constructionism refers to the "importance of language and social interaction in knowledge formation and in establishing social/power relationships" (Case, 2016). This definition indicates that social constructionism is not based in objective reality; it considers knowledge as grounded in "ongoing conversations" as well as in "discourses" (Talja, Tuominen, & Savolainen, 2005). Therefore, the heart of social constructionism is how knowledge is created. Social constructionists contend that knowledge must be created before it can be used. They consider knowledge as subjective, created through language and context.

In their inquiry, scholars who subscribe to the interpretative paradigm assume that reality is socially constructed through language, consciousness, and shared meanings (Myers, 1997). In this sense, the role of the researcher is to expose the opinions of participants (Orlikowski & Baroudi, 1991). This paradigm "sees the world as an emergent social process created by the individuals concerned" (Burrell & Morgan, 2006). The social constructionist approach is built on

the maxim that to understand and to develop insight into a phenomenon, it is useful to consider peoples experiences and perceptions.

Several substantive theories have emerged that are rooted in social constructionism frameworks. They are aimed at scientific understanding of "the nature and causes of individual behavior in social situations" (Baron, Byrne, & Suls 1989). These theories of studying the Nonuse of information/innovation (Bandura's (1963) –Social Learning Theory, Technology Acceptance Model (TAM) by Davis, 1989, Chatman theory of normative behavior by Chatman (2001), Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh *et al* (2003), Roger's diffusion of innovation theory by Rogers (2003)) among others raised the issue of Nonuse each in a different way: Chatman model addresses information related to job avoidance, Wilson model addresses health related information avoidance and discusses anxiety as the initial activity mechanism that determines whether an individual will pursue information searching. Within these theories, Roger's diffusion of innovation theory is appropriate as it addresses the reasons for innovation (DLRS) avoidance/nonuse. This framework is discussed in the next section because it is chosen as a substantive theory to frame this inquiry.

2.5 Theoretical Framework

The theoretical framework for this study was based predominately on the Diffusion of Innovation (DOI) theory. Commencing with his doctoral dissertation presentation in 1957, Everett M. Rogers championed DOI research, culminating in his internationally acclaimed work *Diffusion of Innovation*, which had its fifth edition published in 2003. Rogers's (2003) research findings and generalizations related to DOI have been used as the theoretical framework for a multitude of studies examining the process of innovation communication via channels to

members of social systems over time (Powelson, 2011). Although the genesis of DOI grew out of various research traditions from the dawn of the 20th century (Rogers, 2003), the DOI framework has been widely embraced for studying the diffusion and adoption of IT and Internet innovations (Valier et al., 2008; Häggman, 2009; Williams, & Schwarz, 2009; Andrés *et al.*, 2010; Ross, 2010 and Powelson, 2011).

Diffusion of Innovation Theory

Diffusion of innovation is a theory that has been widely tested, implemented and used to explain individuals and social systems' adoption of new ideas, inventions and practices. This is why a variety of disciplines have used the model as a framework. As cited in Carlet (2014) the theory of DOI has been applied and tested to a vast array of disciplines, such as anthropology (the diffusion of cultural traditions among primitive tribes); medicine (the contagion of a disease); education (some 150 studies made at Columbia University under the direction of Paul Mort); rural sociology (the diffusion of hybrid seed corn among farmers); medical sociology (drug adoptions by physicians); industry (the diffusion of a new product among consumers); and political science (the diffusion of city manager governments in the US states) (Gray 1973, 1994; Mooney and Lee 1999; Daley and Garand 2005). This framework offers great generalizability of overall findings over time, and has emerged as one of the most multidisciplinary research topics in social sciences research today (Prescott 1995; Rogers 2003 in Carlet, 2014). The theory states that innovation is communicated through certain channels over time among the members of a social system. This definition consists of four main elements namely: innovation, communication channel, time and social system.

Rogers (2003) defines innovation as any idea, object or practice that is perceived as a new emergence. An innovation may have been invented a long time ago, but if a person perceives it

as new, then it may still be an innovation for them. Communication channels are a medium used to exchange information between community members. In this context, Information regarding an innovation needs to be disseminated in order to introduce the innovation. Rogers (2003) identifies mass media and interpersonal communication as the two communication channels that are used to communicate an innovation from the source to the receiver. Time defines both the pace at which progress occurs and the positions individuals occupy amid the evolution of such progress (Inman, 2000). Time involved in diffusion consists of (1) innovation diffusion process (time involved between the introduction of new idea, and the decision to accept/reject the new idea), (2) individual innovativeness (the degree to, and rate at which individuals in a social system catch on to a new idea), and (3) an innovation's rate of adoption (the relative speed with which a new idea is adopted and is measured in terms of the number of members in a social system that adopt the new idea at a given time). Social system, the fourth element, is a set of interrelated units such as individuals, groups, organizations, and sub-systems that are engaged in joint problem solving to accomplish a common goal. Rogers (2003) claimed that the nature of the social system affects individuals' innovativeness which is the main criterion for categorizing adopters.

According to Rogers (1995), the four major elements of the DOI theory are components from other theories about the innovation process. Rogers (1995) combines these elements so as to create a mid-range theory of diffusion. By synthesizing all the most significant findings related to diffusion from the variety of disciplines, Rogers (1995) presents a unified theory in his 1995 edition of the book of diffusion. He presents four of the most widely used theories of diffusion namely; innovation decision process theory; individual innovativeness theory; rate of adoption theory and Perceived Attributes of innovation Theory (PAIT) which is the theory adopted for this

study. PAIT is considered appropriate for this study because it explains some characteristics of an innovation which affects the rate of its adoption in the society.

2.5.1 Innovation Decision Theory

One of the general findings of Rogers's literature review is innovation-decision process (Rogers, 2003). The innovation-decision process describes the steps an entity goes through in deciding whether to adopt an innovation. The entity involved may be a solitary individual or a group such as a community or a company. Rogers (2003) described the innovation-decision process as "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation". It holds that each individual passes through a five-stage process when deciding whether to adopt an innovation. The five stages include knowledge, persuasion, decision, implementation and confirmation.

1) Knowledge: The innovation-decision process begins with the Knowledge Stage. One cannot begin the adoption process without knowing about the innovation. In this stage, a person first becomes aware of the technology probably because he has seen someone use the technology in real life, have been informed by a peer or mentor, or have seen the technology advertised on television or read about it in a magazine or on the web.
2) Persuasion: After the awareness of the technology, a person begins to show interest in the technology and seeks out information about the technology: costs, features and user reviews. It is at this point that she begins to consider herself a potential user of the technology and begins to actively consider whether or not to adopt the technology into her regular activities.
3) Decision: At this stage, a person makes the choice to reject or adopt the technology. This personal process involves the weighing of advantages, disadvantages, costs, benefits, and

trade-offs. The decision to adopt or reject is an active choice to not acquire the technology or ever use it. This stage is one of the most critical for understanding technology adoption. It is perhaps one of the most difficult to study.

4) Implementation: The task of integrating the innovation into regular use is called the Implementation Stage. This can be a slow, time-consuming process. For the person involved, changes to the usual habits and practices may be necessary. The technology is also being evaluated at this time to see if it meets expectations. Further information about the technology may also be sought in order to improve usability and usefulness of the technology. During this stage, re-invention may occur. Re-invention refers to the process by which a person adapts or modifies a technology to better meet his/her needs and improve its overall compatibility.
5) Confirmation: Once the processes of integration and re-invention have been completed, the final stage, that is the Confirmation Stage, has been reached. At this point, the person finalizes their decision regarding the adoption of the technology. One option is exactly that of adoption. At this point, the person is committed to using the technology to its fullest potential it can serve in his/her life. Another option is a reversal of the original choice to use the technology. This is essentially a delayed rejection.

After the adoption of a technology, the person does not always continue to use the technology. After an initial period in which the technology is used, the person may abandon the technology. This situation is known as discontinuance. Such discontinuance can occur in several ways. Some technologies face obsolescence in that they cease working or have a limited expectation for the duration of their use. Another form of discontinuance is replacement. If a broken technology is substituted with a new version, this is one form of replacement. A technology may be abandoned

in order to replace it with a newer or older version. Upgrading a computer with the latest software or purchasing a newer model cell phones are examples of this type of replacement discontinuance. The final type of discontinuance is disenchantment rejection, also called abandonment. This is when the user becomes dissatisfied with the technology and quits using it. Although the decision to stop using may be conscious, the user may instead just gradually use the technology less and less until it is forgotten.

2.5.2 Individual Innovativeness Theory

The second aspect of time is the innovativeness of individual or other units of adoption. "That is, the relative earliness/lateness with which an innovation is adopted compared with other members of a system" (Rogers, 1995). Individuals can be placed into five adopter categories based on their innovativeness: innovators, early adopters, early majority, late majority, and laggards" (Rogers, 1995).

1) Innovators: They are considered the most venturesome of the five adopter categories. The desire to be venturesome leads them to join social groups outside of their local area. They share communication patterns and friendships with other innovators despite their geographic locations. Fiscal and mental resiliency to potential setbacks and losses due to an adoption of innovation that is unsuccessful are also binding traits with "a desire for the rash, the daring, and the risky" (Rogers, 1995). The most important role of all of the adopter categories is held by the innovators. That role is the introduction of new ideas into the system. 2.5% of innovators make up the social system.
2) Early adopters: They are considered localites. The early adopters are the opinion leaders for the system. Those potential innovation adopters look to the 13.5% of the system that make up the early adopters for their valued opinion as they are the "embodiment of

successful, discrete use of new ideas" (Rogers, 1995). To reduce their uncertainties, they adopt the innovation, review it, and subjectively evaluate it and share their evaluation with their peers.

3) Early Majority: This third adopter category is a critical link that connects those who adopt early and those who adopt innovations late. This group contains a substantial critical mass as it contains 34% of the system's members. They are very much connected with their peers but rarely hold leadership roles. They do take time in considering the adoption of innovation, but when they do, they adopt it deliberately (Rogers, 1995). This group is the target of those marketers outside of the system looking to push their innovation through the system.
4) Late Majority: These people should be considered the skeptics of the system. This group also contains 34% of the entire system. So, they are also a large critical mass. They wait till others have adopted as they are cautious and skeptical and want to feel that it is safe to adopt. At times it is an economic necessity as well as mounting peer pressure from the system that causes them to adopt (Rogers, 1995).
5) Laggards: The fifth and last group to adopt innovation is the laggards. The remaining 16% of the system population is made up of Laggards who have traditional values and are rooted in the past with suspicion of change and innovation. They socialize with likeminded individuals who, due to their economic condition, must be certain that the innovation that they adopt will not fail (Rogers, 1995).

The adopters of innovation (innovators, early adopters, early majority, late majority, and laggards) utilize the various aspects and individual elements (the innovation, communication

channels, time, and the social system) of diffusion theory when they are involved in the innovation-decision process.

2.5.3 Rate of Adoption Theory

The last aspect of time is the Rate of Adoption which is defined by Rogers (1995) as "the relative speed with which an innovation is adopted by members of a social system". According to Rogers, "The rate of adoption is usually measured by the length of time required for a certain percentage of the members of a system to adopt an innovation". Just like an individual has an effect on the rate of adoption, the system also has an effect. For instance, the number of individuals who adopted the innovation in a period of time represents one measure of the rate of adoption of the innovation. The perceived attributes of an innovation are significant predictors of the rate of adoption. Rogers reported that 49 to 87 percent of the variance in the rate of adoption of innovations is explained by the five innovation attributes which this study adopted and will be described later in this chapter. The attributes are relative advantage, compatibility, complexity, trialability and observability. In addition to these attributes, communication channels (mass media or interpersonal channels), social systems (norms or network interconnectedness), and change agents may increase the predictability of the rate of adoption of innovations.

2.5.4 Perceived Attributes of Innovation Theory

Understanding the perceived attributes of innovation has become a predominant focus of DOI research (Valier, McCarthy and Aronson, 2008; Vega, Chiasson and Brown, 2008; Häggman, 2009; Rouibah and Hamdy, 2009; Powelson, 2011). Rogers (2003) pointed out that, "The individual's [adopter or potential adopter] perceptions of the attributes of innovation, not the attributes as classified objectively by experts or change agents, affect its rate of adoption". In his

DOI research, Rogers further distilled the perceived attributes of innovations to include relative advantage, compatibility, complexity, trialability, and observability. These five characteristics of an innovation have been shown to affect the rate of its adoption in a society (Cullen, 2001). Each of the elements of this theory is described as follows:

1) Relative advantage: Relative advantage is the degree to which the innovation is perceived to be superior to current practice. In other words, the degree to which an innovation is perceived as better than the idea it supersedes by a particular group of users. In prominent diffusion research (Moore and Benbasat, 1991; Rogers, 2003; Venkatesh, Morris, Davis and Davis, 2003), relative advantage was emphasized as an essential innovation attribute in determining the adoption of IT innovations. Often expressed in economic value, societal significance, and other beneficial facets, the variable relative advantage was used to measure the perceived degree of betterment attributed to an innovation in lieu of precursor ideas (Rogers, 2003). According to Robinson (2009), it is measured in terms that matter to those users, like economic advantage, social prestige, convenience or satisfaction. There are no absolute rules for what constitutes "relative advantage". It depends on the particular perceptions and needs of the user group.
2) Compatibility: The degree to which the innovation is perceived to be consistent with socio-cultural values, previous ideas and /or perceived needs. An idea/innovation that is incompatible with a potential user's values, norms, or practices will not be adopted as rapidly as an innovation that is compatible. Rogers (2003) defined compatibility as a measure of the perceived degree of congruence attributed to the innovation based on the adopter's experiences, values, and needs. Distinguishing compatibility as an

essential innovation attribute measure for technology acceptance, Rouibah and Hamdy (2009) further calibrated compatibility as a measure of the adequacy of fit for the task the technology was intended to perform as well as culture in which it will be used. Consistent with Yong (2006), Rouibah and Hamdy (2009) and Powelson (2011), compatibility within the context of this study was assessed by factors including compatibility with values and beliefs, work style, current situation/need.

3) **Complexity:** Complexity is the degree to which an innovation is perceived as difficult to use and understand. It is hypothesized to be negatively related to the rate of adoption of an innovation (Rogers, 1995). Innovations that are simpler to understand and use are adopted more rapidly than innovations that require the adopter to develop new skills and understanding. Analyzing four determinates of c-commerce adoption: innovation attributes, environment, information sharing culture, and organizational readiness, Chong *et al.* (2009) emphasized the perceived degree of complexity as an important innovation attribute determinant. Although commonly associated with perceived ease of use, the variable complexity was defined as an assessment of the perceived degree of difficulty or simplicity attributed to understanding and using the innovation (Rogers, 2003; Chong, Ooi, Lin and Raman, 2009; Conrad, 2010; Powelson, 2011). Rogers's (2003); Chong *et al.* (2009) and Powelson (2011) and meaning of complexity gauges factors such as cumbersome to use, understandability, performs as desired, and easy to learn, are deemed consistent with the purpose of this study.

4) **Trialability:** This is the degree to which the innovation can be experienced on a limited basis. It is the fourth factor in promoting the adoptability of an innovation by

providing the opportunity for a potential user to experience using the innovation itself. The user gets the chance to try a technology without having to fully commit to purchase or adopt it. During this period, the invention may occur. That is, the innovation may be changed or modified by the potential adopter. Trialability is defined as a measure of the perceived ability for use inspection attributed to the innovation (Conrad, 2010). In the context of this study, Rogers's definition will be used. Rogers (2003) defines trialability as a gauge of the opportunity for experimentation; knowing where to try, the ability to try, and the empowerment to try or experiment adequately.

5) Observability: It is the degree to which the results of an innovation are visible to potential adopters. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Visible results lower uncertainty and also stimulate peer discussion of a new idea, as friends and neighbors of an adopter often request information about it. Rogers (2003) asserts that observability is the perceived degree of communicability or visibility to others attributed to the innovation's use, features, or benefits. In the context of this study, Rogers's (2003) meanings of observability will be applied. Rogers defined observability as a measurement used to examine other firms' use, other internal uses, the degree visible, and the ease of viewing other uses of the innovation.

According to Rogers, the above characteristics determine between 49 and 87 percent of the variation in the adoption of any new product. These characteristics have also been used by researchers in different fields and have been discovered to predict the adoption of an innovation

among the affected social system. The following section reviews previous studies on the attribute of innovation in different disciplines.

2.6 Previous studies that adopted the attributes of innovation theory

Several scholars from a variety of disciplines have used the theory of perceived attributes to investigate and explore why innovations are not adopted (Almobarraz, 2007; Eljiz *et al.*, 2010; Stachewicz, 2011; Ntemana and Olatokun, 2012). This section discusses some of the previous studies that used Theory of Perceived Attributes of Innovation to explain how potential adopters judge an innovation based on their perceptions in regard to the characteristics of innovation.

A study by Minishi- Majanja and Kiplang'at, (2004) investigated the diffusion of ICTs in the communication of agricultural information among agricultural researchers and extension workers in Kenya. The study sought to map and audits ICT in the public agricultural sector in Kenya, establish their nature, types, distribution and extent of use in communication of agricultural information. It also assessed the demand and use of ICTs by agricultural researchers and extension workers in their knowledge acquisition and dissemination process. It examined government and institutional policies and their effect on diffusion of ICTs in the agricultural sector. It investigated funding, maintenance and sustainability of ICTs in the agricultural sector and established the knowledge gaps, constraints and challenges encountered in harnessing ICTs in the agricultural sector. Using a quantitative approach, the study found that the relative advantage was low among the respondents and in particular the extension workers because of non-availability of ICTs to them thereby hindering them from acquiring necessary skills to use ICT. The study also found that the use of ICTs was affected by behavioral attitudes, social and economic factors of the respondents. The agricultural researcher also found ICT complex to use because they lack computer and internet literacy skills. The study also found out that information

literacy programmes were better coordinated in the institute where such ICTs were tried often. Lastly, it was discovered that observation and peer discussions had facilitated the adoption and use of ICTs by agricultural researchers in Kenya.

A study by Lu (2006) aimed to investigate and understand the factors that influence the diffusion of Wireless Internet Technology among Faculty Members in Ohio University. Several aspects of Rogers's diffusion of innovation provided the theoretical framework that guided the study such as innovation decision process, adopter's categories, communication channels, institutional factors and perceived attributes of the innovation. The research question related to Rogers's perceived attribute of innovation was: How is wireless Internet technology perceived by faculty members of Ohio University, both adopters and non-adopters in terms of relative advantage, compatibility, complexity, trialability and observability. Using a qualitative method, multiple sources of information were used to collect data: in-depth semi-structured interviews, observation and document analysis. Findings from the study showed that there is high degree of relative advantage and wireless technology is easy to use. However, wireless internet technology is not compatible with the mainstream teaching values and philosophy. There is also low degree of trialability and observabilty.

In a study by Almobarraz (2007) on perceived attributes of diffusion of innovation theory as predictors of internet adoption among the faculty members of Imam Mohammed Bi Saud University (IMSU), the following research questions were raised: To what extent do faculty members at IMSU adopt the Internet for academic purposes?; Are there any significant differences in demographic characteristics among Internet adopters and non-adopters in IMSU?; How does the university administration impact faculty member's desire to adopt the Internet?; Do all the attributes of innovation (relative advantage, compatibility, complexity, trialability,

observability as perceived by faculty members predict their Internet adoption? Using a quantitative research method, the study revealed that 54.7% of IMSU faculty members used the Internet for research and academic activities twice a month or less, indicating a low Internet adoption rate. Statistically, significant differences were noted among adopters and non-adopters relative to income level and English proficiency. Multiple regression analysis showed that all attributes of innovation individually predicted Internet adoption. The combination of all attributes indicated the model could predict Internet adoption among faculty.

The study by Chigona and Licker (2008) used the diffusion of Innovation theory to explain the adoption of Communal Computing Facilities (CCFs) operating among the urban poor in Cape Town, South Africa. This study considers all the five perceived attributes of innovation, channels of communication, social system in which the innovation is diffusing, and consequences of innovation. Using a qualitative research method, data were gathered using observation and interview. The study notes that DOI explains most of the adoption pattern of CCFs: The five attributes of innovations influence adoption according to DOI. As a consequence, the study notes that the introduction of CCFs has consequences not only for the community but also for the institution hosting the CCF.

A study titled "diffusion of innovations, perceived attributes and market penetration in the Ugandan telecommunication sector by Muwanga (2010) whose main objective of the study was to examine the relationship between diffusion of innovations and market penetration in the Ugandan telecommunication sector. The study was guided by the following objectives; to establish the relationship between diffusion of innovations and perceived attributes of innovations, to analyze the relationship between perceived attributes of innovations and Market penetration, and to examine the relationship between diffusion of innovations and market

penetration in the Ugandan telecommunication sector. Data was obtained from University students who were purposively selected. A combination of qualitative and quantitative research design was used and involved descriptive, correlation and regression approaches. Findings revealed that there was a moderate positive relationship between the study variables. Results from the regression analysis showed diffusion of innovations, perceived attributes and the social system moderately predicted of market penetration with adjusted R square of 14.8%, although diffusion of innovations had no significant influence on market penetration. There was a significant mediation effect of perceived attributes on the relationship between diffusion of innovations and market penetration.

Research carried out by Eljiz *et al.* (2010) on the Individual Factors Influencing the Diffusion of Process Innovations from Manufacturing to Health Services Settings was based on Greenhalgh, Robert, Macfarlane, Bate & Kyriakidou (2004) who identified eleven factors that influence the spread and sustainability of innovation in health settings including relative advantage, compatibility, complexity, trialabilty, and observability, potential for re-invention, fuzzy boundaries, minimal risk, relevance, the nature of knowledge required and support. The aim of the study was to determine if these factors help to understand DOI from manufacturing to health setting. A qualitative research method was used. Semi-structured interviews were conducted with eight hospital personnel who helped identify and implement strategies to improve patient flow within the imaging department. The general finding was that computer simulation eased the implementation of process because it: helped to assess relative advantage, presented information in a manner that corresponded with individual preferences, was simple and user friendly, allowed for experimentation, was visual, could be adapted to the department, could accommodate the dynamic nature of departmental processes, offered minimal risk, was relevant to the research

participant and offered information that could be transferred from one context to another. In essence, the major findings from Eljiz *et al* (2010) was that observabitity, trialability combined with low risk appeared to be most influential for individual DOI decisions for the hospital and innovation examined.

A research by Stachewicz (2011) aimed to test the applicability of Rogers' theory of innovation diffusion as it relates to measuring the perceived attributes of innovations of capacity switch technology in user interface controls. Quantitative research method was adopted by using a Likert scale to collect data on the following perceived attributes of innovation- relative advantage, compatibility, trialability, demonstrability, visibility, ease of use, image, voluntariness, perceived risk, and perceived resources as outlined by Moore and Benbasat (1991); Rogers (1995) and Dupagne and Driscoll (2005). The study found out that the results for relative advantage, compatibility, ease of use, image, and perceived risk were statistically significant enough to indicate that a consumer is willing to accept capacitive switch innovation in industrially designed user interface controls while voluntariness, trialability, demonstrability, visibility, and perceived resources did not indicate that a consumer is willing to accept capacitive switch innovation in industrially designed user interface controls . However, the attributes of relative advantage, compatibility, trialability, demonstrability, visibility, ease of use, image, voluntariness, perceived risk, and perceived resources combined would also end up being statistically significant enough to indicate that a consumer is willing to accept capacitive switch innovation.

Powelson (2011) research was based on small business leaders' early and limited adoption of cloud computing. Anchored in a diffusion of innovation theory, the purpose of this quantitative cross-sectional survey study was to examine if there is a relationship between small business

leaders' view of cloud-computing attributes of compatibility, complexity, observability, relative advantage, results demonstrable, trialability, and voluntariness and intent to use cloud computing. The central research question involved understanding the extent to which each cloud-computing attribute relate to small business leaders' intent to use cloud computing. A sample of 3,897 small business leaders were selected from a commerce authority e-mail list yielding 151 completed surveys that were analyzed using regression. Significant correlations were found for the relationships between the independent variables of compatibility, complexity, observability, relative advantage, and results demonstrable and the dependent variable intent to use cloud computing. However, no significant correlation was found between the independent variable voluntariness and intent to use. The findings might provide new insights relating to cloud-computing deployment and commercialization strategies for small business leaders. Implications for positive social change include the need to prepare for new skills for workers affected by cloud computing adoption and cloud-computing ecosystem's reduced environmental consequences and policies.

Using a quantitative research method, Ntemana & Olatokun (2012) examined the influence of the five attributes of diffusion innovation theory on lecturers' use of ICTs. The hypotheses tested was that the five attributes of innovation- relative advantage, compatibility, complexity, trialability, and observabilty of using ICT will not positively affect the lecturers' attitude towards using the technology: A structured questionnaire was used to collect data using multiple regressions to test the five hypotheses formulated. The findings revealed that relative advantage, complexity and observability were found to have a positive influence on the attitude of lecturers towards using ICTs with observability having the highest influence.

The study by Neo and Calvert (2012) on Facebook and the diffusion of innovation in New Zealand public libraries was based on how New Zealand public libraries assessed and evaluated Facebook and the motivating factors that cause New Zealand public libraries to adopt or not to adopt Facebook. Using a qualitative method, interview was used to gather data, the study found out that all the five characteristics were important in explaining the decision to adopt Facebook. Specifically, it found that relative advantage, compatibility and complexity were the most important factors to explain adoption because they have important implications for the rate of adoption and were motivating factors in the adoption/non-adoption of Facebook. Meanwhile, trialability and observability were found to be less important factors in the decision to adopt Facebook.

Quynh (2012) study was on the application of diffusion of innovations, a descriptive pilot study on the perceptions of Home Monitoring Systems (HMS) by adults 45 to 64 years of age. The objective of the study was to describe the potential adopters by measuring the anticipated relative advantage, compatibility and complexity attributes of an HMS and comparing those responses to the intent of adopting an HMS in the future. This study attempted to provide greater context for describing potential adopters based on demographic characteristics and consumer behavior such as purchase preferences. An existing survey was modified to collect perceptions of three anticipated attributes of innovation as they related to the intention of adopting an HMS as a preventive health behavior. The survey modification was theoretically based on the DOI piloted among residents of Chevy Chase and Bethesda. Maryland (N=71). Logistic regression and Pearson correlation analyses were used to detect evidence to support whether perceived relative advantage, compatibility and complexity and demographic variables were associated with the intention to adopt an HMS in the future. The findings pointed out that: majority of participants

were highly educated, perceived themselves to be in very good health, were or had been caretakers and intended to adopt an HMS in the future. Evidence was found supporting the fact that the DOI variables were positively correlated with the intention to adopt an HMS at statistically significant levels ($p < .01$ and .05). However, high ORs and wide 95% CIs caution the use of these variables as precise predictors of innovativeness and small sample size inhibits the interpretation that a pure statistical relationship exists. Additional findings included the potential of using caretaker status as a predictive variable and purchasing an HMS directly from the manufacturer emerged as an insight into consumer behavior.

The research carried out by Cutler (2013) on the topic: How Static is the Statics Classroom?: An investigation into how innovations, specifically Research-Based Instructional Strategies are adopted into the Statics Classroom set out to investigate how educational research, specifically Research-Based Instructional Strategies (RBIS) are adopted by education practice, specifically within the engineering Statics classroom. Using a systematic approach, changes in classroom teaching practices were investigated from the instructors' perspective. Both researchers and practitioners are included in the process, combining efforts to improve student learning, which is a critical goal for engineering education. The study was divided into 3 stages and each was discussed in an individual manuscript. Manuscript 1 provides an assessment of current teaching practices; Manuscript 2 explores RBIS' use by Statics instructors and perceived barriers of adoption; and Manuscript 3 evaluates adoption using Fidelity of Implementation. A common set of concurrent mixed methods was used for each stage of this study. A quantitative national survey of Statics instructors (n =166) and 18 qualitative interviews were conducted to examine activities used in the Statics classroom and familiarity with nine RBIS. The results of this study show that lecturing is the most common activity throughout Statics classrooms, but is not the

only activity. Other common activities included working examples and students working on problems individually and in groups. As discussed by the interview participants, each of Rogers' characteristics influenced adoption for different reasons. For example, Complexity (level of difficulty with implementation of an RBIS) was most commonly identified as a barrier. His study also evaluated the Fidelity of Implementation for each RBIS and found it to be higher for RBIS that were less complex (in terms of the number of critical components). Many of the critical components (i.e. activities required for implementation, as described in the literature) were found to statistically distinguish RBIS users and non-users.

A study by Jwaifell and Gasaymeh (2013) titled "Using the Diffusion of Innovation Theory to Explain the Degree of English Teachers' Adoption of Interactive Whiteboards in the Modern Systems Schools in Jordan: A Case Study" aimed to explain the use of interactive whiteboards (IWBs) by English female teachers in Modern Systems School in Jordan. The study examined and reported teachers' use of IWB and its features that have impact on their decisions to adopt it in Modern Systems School. To achieve the main purpose of the study, research was conducted to answer the following questions:

(1) How is IWB used among English teachers at the Modern Systems School?

(2) What are the English teachers' perceptions of IWBs in the Modern Systems School?

(3) How does Rogers's (2003) major attributes of innovation explain English teachers' perceptions of IWBs at Modern Systems School?

The study employed qualitative case study approach. Data was collected through semi-structured interviews, document reviews, and participatory observations. The study concluded that the extent of teachers' use of IWB is related to their perceptions of the five major attributes: Relative advantages, compatibility, simplicity, trialability, and observability. The regular use of IWB has

shifted the teachers' methodologies of teaching from traditional ways to using dialogues, open sources, and group work.

Carlet (2014) study on "Understanding perceptions and adoption of green stormwater infrastructure" raised the following research questions:

1. Is there a relationship between the following perceived attributes of innovations - relative advantage, compatibility, complexity, trialability, observability, perceived risk, and perceived resources as outlined by Moore and Benbasat (1991); Rogers (2003); Dupagne and Driscoll (2005) – and officials' positive attitudes toward adoption of green infrastructure?
2. What factors influence municipal officials' attitudes toward adopting green stormwater infrastructure? And
3. What factors have a positive influence on adoption of green infrastructure planning at the local government level? Is adoption determined by internal characteristics (e.g., socio-economic status and political orientation)? Is adoption driven by external factors (e.g., federal stormwater regulations)?

Building on existing theories of diffusion of innovation and technology acceptance, the objective of this study was to investigate how municipal officials' perceptions of key attributes of green infrastructure influence their attitudes toward adoption. In addition, this dissertation provides useful insights into the relationship between the diversity of green infrastructure tools that local jurisdictions across the US support with policies or programs, and the factors that influence adoption. A key feature of this study is a nationwide survey conducted among US city stormwater managers, planners and other public officials, whose responses were combined with secondary data and analyzed using multiple regression techniques. Findings indicate that

municipal officials' perceptions of relative advantage, compatibility, trialability, and perceived resources are significant predictor of favorable disposition toward adoption, while perceived risk has a negative influence on attitudes. In addition, the level of environmental awareness and support has the greatest impact on the number of green infrastructure strategies jurisdictions adopted.

All the previous studies reviewed adopted the PAIT in order to investigate the rate of adoption of a particular innovation in a setting. The present study is about the DLRS which is an innovation in Kashim Ibrahim Library; therefore the constructs of PAIT will help to understand why faculty members in ABU do not use the DLRS.

2.7 Summary of the Review

This chapter began with the concept of nonuse and different scholar's typologies of nonuse by Satchel and Dourish (2009), Wyatt (2003) and Sridhar, 1994. However, Sridhar's (1994) typology of nonuse which are marginal use and absolute nonuse was chosen as the best to study issues related to nonuse. Furthermore, research paradigm was discussed under three dimensions which were ontology, epistemology and methodology. Interpretive epistemology was adopted for the study with the belief that reality consists of people's subjective experiences of the external world and the ontological belief that reality is socially constructed. The methodology applied was qualitative because qualitative research covers a broad range of approaches which are linked to different beliefs about what there is to know about the social world and how to find out about it. Qualitative researches are generally directed at providing an in-depth and interpreted understanding of the social world, by learning about people's social circumstances, their experiences, perspectives and histories.

The meta theories for studying nonuse of information was discussed which later led to choosing a substantive theoretical framework which is DOI theory by Rogers (1995). The reason for adopting DOI theory and specifically the PAIT and why it was deemed appropriate for the study was highlighted. Several studies from different disciplines that adopted the PAIT were reviewed. The objective of their studies, the methodology they used and their findings in respect to the theory were highlighted.

Despite the fact that many researchers have carried out investigation in different fields and have agreed that the PAIT is associated with innovation adoption, to the best of the researcher's knowledge, there is little research done in the area of innovation in the library settings using PAIT. Also, it was obvious from the previous studies reviewed that all the studies were carried out outside Nigeria signifying that there is little or nothing done in the area of using theoretical framework to understand issues related to nonuse of innovations. In addition, most of the studies reviewed adopted a quantitative methodology in which findings were generalized. This study however, adopted a qualitative measure so as to study the Faculty Members of ABU in their social world in order to make sense of their situations based upon their individual experiences, memories and expectations about the innovation under study so that meaning can be constructed through experience resulting from different interpretations. As such, the review of literature has identified methodological gap.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is discussed under the following sections:

3.2 Research Method Adopted

3.3 Population of the Study

3.4 Sampling and Sampling Technique

3.5 Instruments for Data Collection

3.6 Procedures for Data Collection

3.7 Procedures for Data Analysis

3.8 Rigour in Qualitative Research

3.2 Research Method Adopted for the study

In-line with the philosophical research paradigm which is interpretive (pg 20), the research method adopted for this study was qualitative. Qualitative research method is primarily an exploratory research method used to gain an understanding of underlying reasons, opinions, and motivations. Based on the interest of the researcher, which is; the meaning of experiences to the subjects themselves, rather than generalizing results to other groups of people, a qualitative case study research design is considered appropriate for this study.

Yin (2003) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined. Case studies are in-depth examinations of people or groups

of people as well as an institution. The underlying philosophy of a single case study is "not to prove but to improve" (Stufflebeam, Madaus and Kellaghan, 2000 in Thomas, 2010).

A case study does not utilize any particular methods of data collection or data analysis (Merriam, 1998). This approach makes use of multiple methods of data collection such as interviews, document reviews, archival records, direct and participant observations and subsequently thick descriptions of the phenomenon under study (Yin, 2003). All these collected evidences can be analyzed in order to arrive at the best responses to the research question(s). This could enable a researcher gain a better understanding of why the situation happened the way it did. Case studies do not claim to be representative, but the emphasis is on what can be learned from a single case (Tellis, 1997) in Thomas (2010).

In line with the foregoing positions, this study considers case study approach as appropriate because its aim is to understand human beings in a social context by interpreting their actions as a single group. Furthermore, the study involved only one institution (ABU) and Faculty Members were the group of people that was examined. This study adheres to the underlying philosophy of single case study since it seeks to improve the use of DLRS within the learning environment at ABU through a development of a model, which might be applicable to other institutions operating under similar situations.

Also, due to the nature of the research questions and the interpretive position adopted for this study, a case study strategy was considered the most appropriate approach to employ because it provided a systematic way to collect data, analyze information, and report the results, hence aiding the in-depth understanding of the particular problem at hand which is the nonuse of DLRS by Faculty Members in ABU Zaria.

Specifically, the case study strategy for this study:

1) Provided a variety of participant's perspective
2) Allowed the use of multiple data collection techniques and
3) Examined the nonuse of DLRS within a technology rich environment such as the Ahmadu Bello University environment.

3.3 Population of the Study

Population for this study was the total of all the individuals who have certain characteristics and are of interest to this researcher. The total number of Faculty Members in ABU Zaria is 2308. (MIS, ABU, 2017). Number of population is not a consideration in qualitative research, however, the unit of analysis is essential (Yin, 2014). The unit of analysis for this study was the Faculty Members who are marginal users and absolute nonusers of DLRS in ABU Zaria.

3.4 Sampling size and Sampling Techniques

Sampling is defined as selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they are selected (Yount, 2010). It is a subset of the population- taking a smaller subset from the larger set of general participants such that the smaller subset is representative of the larger set. This definition implies a desire to achieve statistical generalization which is quantitative (Yin, 2014). However, this study is qualitative and sampling in qualitative research is defined as the selection of specific data sources from which data are collected to address the research question (Gentles, Charles, Ploeg and McKibbon, 2015). Research participants for this study comprised Faculty Members who are marginal users and absolute nonusers in three of the twelve faculties in Ahmadu Bello University. They are Faculty of Administration, Kongo campus; Faculty of Medicine (clinical), ABUTH Shika and

Faculty of Social science, Samaru campus. These three campuses were selected in order to have the idea of the situation in regards of the infrastructural facilities in each of the campuses and the Faculty Members' experiences on the use of DLRS. This is in-line with the notion of multiple variation sampling (Patton 2001) that samples can be selected using a wide range of variation on dimension of interest and it is often used when deciding on which group to involve in Focus Group Discussion (FGD) which was one of the data collection methods adopted for this study.

There are no hard and fast rules in determining sample sizes for qualitative studies (Nastasi, n.d) however, what sample size will reach saturation or redundancy (i.e. the sample size should be large enough to leave you with "nothing left to learn") can be considered. Hence the sample size should not be regarded as a subset of the population (van Manen, 2014). Therefore, the sample size for this study was determined at the point of saturation. In essence, many interviews were conducted for this study, but after the 12^{th}, there were no new concepts emerging. Therefore, 12 participants were chosen to enable in depth exploration of the phenomenon under investigation. According to Glaser and Strauss (1967), Lincoln and Guba (1985), Glaser (1992), Morse (1995), Charmaz (2003) and Merriam (2009) "the commonly proposed criterion for determining when sufficient sample size has been reached in qualitative research is saturation". The selection of participants was done using purposive sampling technique.

Purposive sampling is a type of non-probability sample for selecting the population in a qualitative research. In a non-probability sample, units are deliberately selected to reflect particular features of or groups within the sampled population (Ritchie, Lewis, Nicholas & Ormston (2014). The sample is not intended to be statistically representative. The chances of selection for each element are unknown but, instead, the characteristics of the population are used as the basis of selection. It is this feature that makes them well-suited to small-scale, in-

depth studies. In this approach, the selection of participants, settings or other sampling units is criterion based or purposive (Mason, 2002; Patton, 2002). The sample units are chosen because they have particular features and characteristics which enabled detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study. It involves selecting participants who are best able to help the researcher understand the problem and answer the research question (Creswell, 2013).

Participants for this study were purposely selected based on the following criteria:

a) Assistant lecturer and above

b) Have knowledge about DLRS and have never used it (absolute non-user)

c) Have not used DLRS for the last six month prior to the day of the interview (marginal user)

Below are the faculties in which participants were drawn.

Table 3.2 Faculties and faculties sampled

	Faculties	**Faculties Sampled**
1	Administration, kongo	Administration, Kongo
2	Agriculture, Samaru	
3	Arts, Samaru	
4	Education, Samaru	
5	Engineering, Samaru	
6	Environmental Design, Samaru	
7	Medicine (clinical), Shika	Medicine, ABUTH Shika
8	Law, Kongo	
9	Pharmaceutical Sciences, Samaru	
10	Sciences, Samaru	
11	Social Sciences, Samaru	Social Sciences, Samaru
12	Veterinary Medicine, Samaru	

3.5 Instruments for Data Collection

To collect data for this study, a combination of Focus Group Discussion (FGD) and in-depth interview were used.

3.5.1 Focus Group Discussion

Focus group discussion involve discussing and hearing from others. FGD give participants more opportunity to refine what they have to say and also provide a social context within which the phenomenon is experienced, and display the way in which context can shape people's views, showing how data are generated through conversation with others. Also, FGD vividly display differences between participants, and create an opportunity for differences to be directly and explicitly discussed (Finch and Lewis, 2003).

Focus group discussion is less structured compared to in-depth interview. This is because of the difficulty in bringing structure in a group; however rich data can emerge through interaction within the group, for example, sensitive issues can be revealed in FGD because in a group, people develop and express ideas they would not have thought about on their own.

This study however, used FGD for data collection before individual in-depth interview was conducted. The outcome of the FGD led to adjustment of questions that appeared too ambiguous for the individual participant so as to avoid confusion. Some of the rich data captured from FGD participants were further explored during the in-depth interview. In addition, some issues that emerged from conducting FGD are Digital Information Sources and Services (DISS) and infrastructural facilities for accessing DISS. These led to re-adjusting of the research questions and were included in the interview guide for individual in-depth interview.

3.5.2 In-depth Interview

In-depth interview is a method of gathering information through oral quiz using a set of pre-planned core questions. It involves asking questions and getting answers from participants in a study. According to Shneiderman and Plaisant (2005), in-depth interviews can be very productive since the interview can pursue specific issues of concern that may lead to focused and constructive suggestions. The main advantages of this interview method of data collection according to Genise (2002); Shniederman and Plaisant (2005); Alshenqeeti (2014) include:

1) Direct contact with the participants leading to specific, constructive suggestions.
2) Good at obtaining detailed information
3) Few participants are needed to gather rich and detailed data.

In order to be consistent with the participants, the interviewer has a set of pre- planned core questions for guidance such that the same areas are covered with each interviewee. As the interview progresses, the interviewee is given the opportunity to elaborate or provide more relevant information if he/she decides to do so.

For the purpose of this study, the researcher interviewed every participant using an in-depth interview approach. The reason for using in-depth interview method to collect data for this study was because of the key feature of in-depth interviews being a depth of focus on the individual which provides an opportunity for detailed investigation of each person's personal perspective for in-depth understanding of the personal context within which the research phenomenon is located, and for very detailed subject coverage. In this study, this method allowed the researcher to investigate and have an in-depth understanding of each Faculty Member's personal perspective about why they do not use DLRS. In so doing, data collected set the perspectives heard within the context of personal history or experience making it possible for delicate or

complex issues needing to be explored at a detailed level to be done. According to Legard, Keegan and Kitward (2003), in-depth interview makes it possible for different issues to be related to individual personal circumstances.

3.6 Procedures for Data Collection

In order to get participants for the FGD, the researcher picked samples from Faculty Members who fall into the above criteria (pg 60). Any Faculty Member willing to participate was given a consent form to read in order to get their approval for the interview and an assent form to fill so as to attest their willingness to participate. A minimum of five Faculty Members constituted the FGD depending on each of the Faculties visited. Maughan (2003) recommends the membership of an ideal focus group to range from six to twelve subjects and Nastasi (n.d) recommends five to ten. Each of the FGD lasted between 1 hour and 1 hour 45 minutes amidst light refreshment provided by the researcher. Two research assistants were employed for the task and a staff of KIL (Ukashatu Musa Hamza) who after each of the discussions scheduled another time for the participants and whoever was interested for an informal training on the use of DLRS in each of the faculties visited.

Individual in-depth interviews took place three months after FGD. This was because participants in one of the faculties were uncooperative initially despite several visits and phone calls. It took the intervention of one of the researcher's supervisor before the FGD finally took place. The researcher did not pick samples for the in-depth interview among the participants from the FGD because it was assumed that the FGD participants were users of DLRS because of the training given to them after the FGD. This was later confirmed when the researcher went to the faculties to seek their consents for the in-depth interview. The in-depth interview lasted between 45 minutes to 1 hour. The interview was completed within two weeks with the help of three

research assistants who were properly briefed on the purpose of the research. The researcher did some follow up interviews where some of the responses were not clear and also to confirm their responses. All responses for both FGD and interview were recorded using a tape recorder with the permission of the participants.

3.7 Procedure for Data Analysis

In qualitative study data collected are analyzed using qualitative content analysis. Since this is a qualitative research, data collected from Faculty Members were analyzed using qualitative content analysis. Qualitative content analysis as defined by Hsieh and Shannon (2005) is a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Thematic Analysis). Qualitative content analysis can be deductive or inductive. This study adopted inductive qualitative content analysis. Inductive qualitative content analysis involves a process designed to condense raw data into categories or themes based on valid inference and interpretation. The approach used was directed and summative content analysis. Directed content analysis is a situation in which initial coding starts with relevant research findings. Then, during data analysis, the researcher allowed categories to emerge from the data. The purpose of this approach usually is to validate or extend a conceptual framework or theory. Using this approach, the researcher was able to validate the theoretical framework which is PAIT and develop conceptual framework (Figure 3, Appendix II). Summative content analysis starts with counting of words, and then extends the analysis to include latent meanings and themes, though according to Hsieh and Shannon (2005), this method seems quantitative in the early stage, but the goal is to explore the usage of the words in an inductive manner. This approach is exhibited in the

frequency and percentage analysis of categories and sub categories in chapter 4 (see 4.2 Data Analysis).

The Process of inductive analysis as described by Zhang and Wildemuth (2009) was adopted for this study. The steps are highlighted as follows:

1. Prepare the Data: this is referred to as data cleaning and formatting. This was done by transforming the audio interview into written text (transcription).
2. Define the Unit of Analysis: the unit of analysis is represented by its relevance to each of the research questions raised for this study.
3. Develop Categories and a Coding Scheme: the raw data were linked to the research questions. This was achieved by extracting phrases, sentences and words that best answers the research question from each narrative. This is known as open codes.
4. Test Your Coding Scheme on a Sample of Text: this was done using an iterative process (moving back and forth) to check the coding consistency until a sufficient coding consistency was achieved.
5. Code All the Text: all open codes from each of the respondents answering a particular research question was brought together and tagged “Related open code”. The related open codes were categorized and tagged “Subcategories”. All related subcategories were identified and tagged “Categories”. Categories that were related were later identified and tagged “Theme”.
6. Assess Your Coding Consistency: after coding the entire data set, the researcher with the help of her supervisors re-checks the coding to ensure its consistency.

7. Draw Conclusions from the Coded Data: in order to make sense of the themes and categories identified, the researcher made inference through the frequency and percentage of sub categories and categories (tables and figures)
8. Report Your Methods and Findings: the research was able to provide a good description and interpretation of the study. This was done by putting up an interesting readable report that provides sufficient description to allow the reader to understand the basis for an interpretation, and sufficient interpretation to allow the reader to understand the description.

3.8 Rigour in Qualitative Research

Research studies whether qualitative or quantitative should be critically assessed. According to Long and Johnson (2000) "Failure to assess the worth of a study- the soundness of its method, the accuracy of its findings and the integrity of assumptions made or conclusions reached could have dire consequences" hence, the need for rigour in a qualitative research. Rigour in qualitative research has to do with the ability to determine if the conclusions drawn by researcher are truthful which makes them comparable to validity and reliability in quantitative research (Long and Johnson, 2000; Houghton, Casey, Shaw and Murphy, 2013). However, Lincoln and Guba (1985) identified four criteria that are the best to ensure trustworthiness of a qualitative research study, they are: Credibility, Dependability, Confirmability and Transferability. Therefore, the trustworthiness of this study was determined using three of the four criteria: Credibility, Dependability and Transferability. These were discussed below.

Credibility (confidence in the truth of the findings): the following are techniques that can be used in establishing credibility: Prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy and member checking (Cohen and

Crabtree, 2008). To ensure credibility of this, the researcher adopted persistent observation and prolonged engagement. Prolonged engagement and persistent observation require researchers to spend sufficient time in the field or in case-study site to gain full understanding of the phenomena being investigated (Altheide and Johnson, 1994 in Houghton, Casey, Shaw and Murphy, 2013). The researcher, apart from being a Faculty Member in the same institution under study, has been working on this study long enough to be acquainted with the study population (precisely four years). One of the activities the researcher engaged in was FGD with Faculty Members in Faculty of Education in the presence of the researcher's supervisors. This activity helped in the adjustment of interview guide in preparation for FGD in the three faculties chosen for the study. The discussion lasted for more than one hour against the 45minutes – 1hour stipulated for the discussion. This also helped in allocating time for FGD in the three sampled faculties. In addition, due to the researcher's close proximity to the Faculty Members and DLRS in KIL, the nonuse of the DLRS was closely monitored through persistent observation which facilitated the admittance of the right samples for the interview.

Dependability (showing that the findings are consistent and could be repeated): The technique for establishing dependability is inquiry audit (Cohen and Crabtree, 2008). The researcher adopted an external audit technique. External audit involves a researcher that is not involved in the research process to examine the process and product of the research study. The purpose is to evaluate whether or not the findings, interpretations and conclusions are supported by the data. Aside the supervisors of this study, the researcher was able to ensure dependability by allowing qualitative researchers both within and outside the study area to examine the process and outcome of this research study and they were able to ensure that the findings, interpretations and conclusions were supported by the data provided for the study.

Transferability (Fittingness)**:** showing that the findings have applicability in other context. In order to determine transferability, the original context of the research must be adequately described so that judgments can be made (Koch, 1994 in Houghton, Casey, Shaw and Murphy, 2013). The techniques that can be used to ensure transferability is thick description (Cohen and Crabtree, 2008). Thick description as described by Lincoln and Guba (1985) is a way of achieving a type of external validity. By describing a phenomenon in sufficient detail one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations and people. The researcher has provided enough information by describing the DLRS and its nonuse in details.

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CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents the data generated from participants, analysis of data and interpretations. The data presentation, analysis, and interpretations were based on the research questions generated. Thus, the data collected were analyzed and findings presented under appropriate sub headings in line with the research questions.

4.2 Data Analysis

Data in the form of phrases and sentences about the nonuse of DLRS by Faculty Members in ABU were collected from twelve participants from faculties of Social Science, Samaru Campus; Administration, Kongo Campus and Medicine, ABUTH Shika. The distribution of participants according to departments is as follows: Accounting, Local Government, Economics, Political Science and International Studies, Pediatrics, Microbiology and Public Administration (Table 4.2.1). The spread of participants across seven departments in three faculties provided diverse sources of information in regard to this study. This is in line with the notion of multiple variations sampling in qualitative research. The responses comprise of 31,291 words representing a variety of voices on this topic. The responses provided numerous views and insights into issues relating to the nonuse of DLRS by Faculty Members in ABU.

Table 4.2.1: Selected Faculty Members for in depth Interview

S/NO	FACULTY	DEPARTMENT
1.	Administration	Accounting
2.	Administration	Local Government
3.	Administration	Local Government
4.	Social science	Economics
5.	Social science	Economics
6.	Social science	Political Science and International Studies
7.	Social science	Economics
8.	Medicine	Pediatrics
9.	Social science	Political Science and International Studies
10.	Medicine	Micro biology
11.	Administration	Accounting.
12.	Administration	Public Administration

4.2.1 Interview Analysis

The recorded voices from the participants were transcribed and each of the responses from the twelve participants was read, examined and re-examined using analytical inductive process described by Creswell (2013) that "researchers works back and forth between themes and databases until the researcher has established a comprehensive set of themes". While reading the narratives, the researcher highlighted words, phrases, sentences that dealt with the research questions.

One hundred and seventy two (172) narratives explaining research questions (pg 10) related to issues on the nonuse of DLRS were recorded in a table. An iterative analysis method informed by Zhang, and Wildemuth (2009) employed a series of steps for coding and this was used to code the highlighted narratives. Following these steps, the researcher read through the data looking for variances and similarities in narratives. In doing this, 172 open codes were generated.

Thirty five (35) topics were identified as classification sub-categories from the six research questions. The sub categories were then further collapsed into fifteen (15) emergent categories.

However two (2) themes emerged from research question one. Table 4.2.2 depicts the data analysis steps showing the sub categories, categories and themes. The figure representations were presented in appendix II. Figure 1 present data analysis steps by sub categories, categories and themes while figure 2 present numbers of open codes, sub categories and categories.

Table 4.2.2: Data analysis steps by themes, categories and sub categories

RQs	THEMES	CATs	S-CATs
1. **What are the experiences of Faculty Members in ABU on the use of Digital Information Sources and Services?**	Everyday life	1. Online communication technologies	1. E-mail 2. Chatting 3. Facebook
		2. Electronic commerce	4. Online shopping 5. E-payment
	Academics (teaching and research	1. Databases	1. Generalized search tools 2. Academic search tools
		2. DLRS	3. On-line databases
2. What infrastructural facilities do Faculty Members use in accessing Digital Information Sources and Services?		1. Capital intensive technologies	1. University LAN
		2. Less capital intensive technologies	2. Personal MODEM 3. Personal router
3. What are the experiences of faculty members about infrastructural facilities provided by ABU to access digital information sources and services?		1. Ineffective Infrastructural facilities	1. Difficult to connect LAN 2. LAN is not working 3. Network problem when using LAN 4. Power problem when using LAN 5. The service is not extended to other parts of the institution 6. Wireless is not effective 7. No access to wireless connection
		2. Improved internet infrastructure	8. ABU Internet infrastructural facilities has improved

		3. Limited computer access for faculty	9. No provision of computers to staff
4. What are the DLRS faculty members aware of in ABU?		1. Aware of DLRS	1. I am aware of online databases 2. I am aware of MTN e- library 3. I am aware of IR 4. I am aware of offline databases
		2. Un aware of DLRS	5. I am not aware of any DLRS
5. What are the reasons for the nonuse of DLRS by Faculty members in ABU?		1. Lack of information	1. Nobody informed us of DLRS existence in the library
		2. Hospitality	2. I was not well attended to in the library
5. How does the constructs of PAIT explain the experiences of faculty members in ABU on the non use of DLRS?		1. Relative advantage	3. Power constraint 4. I always get what I need from other sources 5. Accessibility problem 6. DLRS is not close to us 7. Bad network
		2. Trialability	8. Convenience (time) 9. colleagues from abroad assist me to get materials I need for my research 10. Nobody informed us on how it works
TOTAL	**2**	**15**	**35**

KEYS

RQs	**RESEARCH QUESTION**
CATs	**CATEGORIES**
S-CATs	**SUB-CATEGORIES**

The15 wide categories for 6 research questions raised for this study emerged from underlying issues related to specific concerns. The description of these categories were presented in appendix I, table 1

The 2 themes, 15 wide categories and 35 sub-categories as shown in the data analysis steps in table 4.2.2 were analyzed based on each of the research questions raised. These are shown in the analysis below:

4.2.1. The experiences of Faculty Members in ABU on the use of Digital Information Sources and Services

This section seeks to find out the experiences of Faculty Members about DISS in respect to 2 themes, their categories and sub categories. These are explained below:

THEME (1) EVERY DAY LIFE

Table 4.2.3: - DISS use for everyday life

RQ	CATs	S-CATs	FREQ	%GE
What are the experiences of Faculty Members in ABU about DlSS?	1.online-communication technologies	1.1 E- mail	5	2.9069
		1.2 Chatting	3	1.7442
		1.3 Face book	2	1.1628
	Group total		**10**	**5.8140%**
	2.Electronic commerce	2.1Online shopping	2	1.1628
		2.2 E payment	2	1.1628
	Group total		**4**	**2.3256%**
	Groups total		**14**	**8.140%**

KEYS

RQ	**Research Question**
CATs	**Categories**
S-CATs	**Sub-Categories**
FREQ	**Frequency**
%GE	**Percentages**

Category 1 – Online communication technologies

Online communication technologies (10/172, 5.81%) category includes narratives related to the experiences of Faculty Members about the DISS use for everyday life. This category is divided into three sub-categories: E-mail (5/172, 2.91%), Chatting (3/172, 1.74%) and Facebook (2/172,

1.16%). The responses from these three sub-categories are explained below.

E-mail: this sub- category comprised of explanations about the experiences of Faculty Members on the DISS used for everyday life. The researcher found out that even though some of the participants are used to research and as taken it as their every day routine they still have time to do other things like checking e-mails. A Lecturer II in the Department of Local Government, Faculty of Administration said "mostly I send mails because I am a research consultant, I deal with clients outside this environment and most of our transactions are on line. There are people I don't even see and I will start their work and finish it. We only communicate through either e-mail or text messages".

Chatting: this sub- category comprised of explanations about the experiences of Faculty Members on the DISS used for everyday life. The researcher found out that Faculty Members interviewed have time to chat. A Lecturer I in the Department of Public Administration said "sometimes I use to chat but not quite often". Similarly a Lecturer I from the Department of Microbiology Faculty of Medicine said he chats but it is occasionally.

Face book: this sub- category comprised of explanations about the experiences of Faculty Members on the DISS used for everyday life. The researcher found out that Faculty Members engage in social networking like facebook, though they are not devoted to it. A Lecturer I in the Department of Accounting said "… I am not even the facebook type even though I have a facebook account, but it is a personal thing. I think those things distract me, so I don't bother about facebook that much. That doesn't mean I don't access facebook at all. Once I accidentally find myself there I look at one or two things and I move on".

Category 2: Electronic commerce

Electronic commerce (4/172, 2.33%) category includes narratives related to the experiences of Faculty Members about the DISS for everyday life. This category is divided into two sub-categories: shopping (2/172, 1.16%) and e payment (2/172, 1.16%). These two sub-categories are explained below.

Online shopping: this sub-category comprised of explanations about the experiences of Faculty Members on the DISS used for everyday life as it relates to online shopping. The researcher found out that some Faculty Members interviewed do shop using DISS. A Lecturer I in the Department of Local Government, Faculty of Administration said "I don't buy directly because it is risky and we are not up to that age yet in this country but I do transfer, pay school fees and other charges which are as good as shopping". In a not too similar situation, a Lecturer I in the Department of Public Administration, in the same faculty said he does a lot of shopping especially on Amazon".

E payment: this sub- category comprised of explanations about the experiences of Faculty Members on the DISS for everyday life as it relate to e-payment. The researcher found out that participants make payments electronically. A Lecturer I in the Department of Local Government said "I do transfer through the network (e-banking). I also pay school fees and other things like charges". Similarly, a Senior Lecturer in accounting department from the same faculty said "I do almost everything on line. Even my wash man I pay him online. Yah this morning today I made payment from my handset of 2 to 3 million naira, let say that I'm highly digital not for only academic".

THEME (2) RESEARCH AND TEACHING

Table 4.2.4: DISS use for research and teaching

CATs	S-CATs	FREQ	%GE
1. databases	1.1 Generalized search tools	11	6.3953
	1.2Academic search tools	5	2.9069
Group total		**16**	**9.3023%**
2. DLRS	2.1Online databases	6	3.4884
	2.2 others	2	1.1628
Group total		**8**	**4.6512%**
Groups total		**24**	**13.9534%**

KEYS

CATs	**Categories**
S-CATs	**Sub-Categories**
FREQ	**Frequency**
%GE	**Percentages**

Category 1 – Databases

Database (16/172; 9.30%) category includes narratives related to the experiences of Faculty Members about the DISS use for teaching and research. This category is divided into two sub-categories: generalized search tools (11/172, 6.40%) and academic search tools (5/172, 2.91%). Responses from these two sub-categories are explained below.

Generalized search tools: this subcategory comprised of explanations about experiences of Faculty Members about the DISS used for teaching and research. Participants make use of Google and some of them use yahoo for teaching and research. A response by a Lecturer I from Faculty of Medicine, Department of Microbiology "I commonly use Google search for my research and to prepare students' lecture". A similar response by a Lecturer II from the

Department of Local Government, Faculty of Administration stated that "my everyday life is about research and I do it on line through Google search". Another Lecturer I from Paediatrics Department, Faculty of Medicine said "well, Yes, I usually download journals for research and sometimes consult on line resources almost on daily basis for teaching via Google search engine". Also, a Lecturer I from the Department of Microbiology, Faculty of Medicine said "In terms of Academics, I commonly use Yahoo search engine to prepare for my students' lecture, I use it for research purposes and also even to read. Also, If I want to know the latest information and so on and so forth"

Academic search tool: this subcategory comprised of explanations about experiences of Faculty Members about the DISS used for teaching and research. Some of the participants make use of academic search engine such as Google scholar and Social Science Research Network (SSRN) for teaching and research. A Senior Lecturer from the Department of Accounting, Faculty of Administration narrated "I'm highly digital. To be honest with you I even have cases where I deliver lecture online, while I was sick in Kano, I had the lecture with my student here in ABU, I make them to go digital in a way. Umm Yes and I have also done conferences abroad from, I mean I do a lot of work on line. I largely depend on my search effort on Google scholar yes that's what I do". A Lecturer I from accounting department, Faculty of Administration said "I normally have access to the scholarly articles in SSRN, they have provision for certain materials for research and teaching". Similarly another respondent; a Lecturer II from the Department of Local government from the same faculty described his experience "… sometimes I subscribe for (SSRN). I have forgotten the full meaning but I will remember in the course of the discussion. In SSRN, you will be given the current information though you have to subscribe. Once your subscription is off they will disconnect you, if you subscribe you will be getting current issues

relevant or related to your area of specialization. For instance now, my background is accounting; my first degree, my second degree, even my third degree is in accounting. Definitely the information I am going to get have to be related to accounting (either public sector or private sector accounting), it has to relate to that environment. If I subscribe every current thing they will be sending it to my box, which I will access to build up my own information".

Category 2 – DLRS

DLRS (8/172; 4.65%) category includes narratives related to the experiences of Faculty Members about the DISS use for teaching and research. This category has a subcategory: On-line databases (6/172, 3.49%) and others (2/172, 1.16%). These are explained below

Online databases: this subcategory comprised of narrative about experiences of Faculty Members' use of online databases subscribed to by the university for teaching and research. This is one of the DLRS provided by the university library. These databases are not often used by the Faculty Members (though it is the most popular DLRS known to the Faculty Members) as some of their responses pointed out, hence the use of the concept "nonuse" for this study. A Lecturer I from the Faculty of Administration narrated " When I was doing my PhD, I used JstoR and another respondent; a lecturer I from the Faculty of Medicine, Pediatrics Department said "Sometimes I use HINARY and ScienceDirect for my academic work".

Others: the 'other' (2/172, 1.16 %) subcategory explains the experiences of Faculty Member use of DISS for teaching and research. This comprises of ABU Institutional Repository (IR) and offline databases. Only one Faculty Member agreed to have used IR and one Faculty Member used one of the offline databases which is Encarta. A Lecturer I from the Faculty of Administration, Public Administration Department narrated "When I was doing my PhD I was using Institutional Repository (IR)". Also a Local Government Lecturer I from the same Faculty

said “I once used Encarta or something like that for my research”.

4.2.2 The infrastructural facilities Faculty Members in ABU use to access Digital Information Sources and Services

This part seeks to find out the infrastructural facilities Faculty Members use to access DISS. The categories and the sub-categories are explained below:

Table 4.2.5: Infrastructural facilities for accessing DISS

RQ	CATs	S-CATs	FREQ	%GE
What infrastructural facilities do Faculty Members use in accessing DISS?	1.capital intensive technologies	1.1University LAN	10	5.8139
		1.2Others	1	0.5813
	Group total		**11**	**6.3953%**
	2. not capital intensive technologies	2.1Personal MODEM	12	6.9767
		2.2Personal router	1	0.5813
	Group total		**13**	**7.5581%**
	Groups total		**24**	**13.9534%**

KEYS

RQ	**Research Question**
CATs	**Categories**
S-CATs	**Sub-Categories**
FREQ	**Frequency**
%GE	**Percentages**

Category 1- Capital intensive technologies

Capital intensive technologies (11/172; 6.39%) category includes narratives related to the infrastructural facilities used by Faculty Members to access DISS. This category has a sub-category: University Local Area Network (LAN) (10/172; 5.81), and others (1/172; 0.58%). These sub-categories are explained below.

University LAN: this subcategory depicts narratives related to the infrastructural facilities used

by Faculty Members to access DISS. Faculty Members mostly use the university LAN to access DISS. Similar to what other Faculty Members said; a respondent from Faculty of Medicine narrated that "Depending on my location, in my office I usually accessed the university web site (ABU) through the university cable (LAN)"

Others: this subcategory explains other infrastructural facilities use to access DISS by Faculty Members in ABU which is university wireless. This subcategory is observed from the following narratives by only one Faculty Member; a Lecturer II from the Faculty of Administration. "…Then they still have another wireless service they call WiFi which I have tried to use, though it hardly work".

Category 2- Less capital intensive technologies

Less capital intensive technologies (13/172; 7.56%) category includes narratives related to the infrastructural facilities used by Faculty Members to access DISS. This category is divided into two sub-categories: personal MODEM (12/172; 6.98%) and personal wireless (1/172; 0.58%). These two sub-categories are explained below.

Personal MODEM: this subcategory depicts narratives related to the experiences of Faculty Members on the infrastructural facilities used to access DISS. Participants mostly use their personal MODEM to access DISS which is not capital intensive because they can afford it. A Lecturer I from Faculty of Administration, Department of Local Government narrated that "Well, I use my modem, I subscribe on monthly basis, three thousand naira, four thousand naira depending on the limit". Another Faculty Member; a Lecturer I from the Faculty of Medicine, Department of Pediatrics said "if I'm away from the office the connection is usually poor, so I use my MODEM".

Personal router: this subcategory explains the infrastructural facilities use to access DISS by Faculty Members in ABU which is personal router. This subcategory is observed from the following narratives by a Faculty Member who does not make use of ABU infrastructural facilities at all. A Senior Lecturer from the Faculty of Administration narrated: "I say my solo efforts. I don't use the university facilities. No, look at my router for the wireless and look at the university cable here can you see where I left it can you see my telephone that's my MODEM".

4.2.3. The experiences of Faculty Members about infrastructural facilities provided by ABU to access Digital Information Sources and Services

This section seeks to uncover the experiences of Faculty Members about infrastructural facilities provided by ABU to access DISS. The categories and sub-categories are explained in Table 4.2.6 below:

Table 4.2.6: Experiences of Faculty Members about the infrastructural facilities provided by ABU

RQ	CATs	S-CATs	FREQ	%GE
What are the experiences of faculty members about infrastructur	1. In effective Infrastructural facilities	1.1 Difficult to connect LAN	2	1.1628
		1.2 LAN is not working.	2	1.1628
		1.3Network problem when using LAN	3	1.7442
		1.4Power problem when	5	2.9069

al facilities provided by ABU to access digital information sources and services?		using the cable		
		1.5 The service is not extended to other part of the institution	4	2.3256
		1.6 Wireless not effective	3	1.7442
		1.7 No access to wireless connection	2	1.1628
		Others	2	1.1628
	Group total		**23**	**12.2209%**
	2.Improved Internet Infrastructure	2.1 ABU Internet infrastructural facilities has improved	2	1.1628
	Group total		**2**	**1.1628%**
	3.Limited computer access for faculty	3.1 No provision of computers to staff	1	0.5813
	Group total		**1**	**0.5813%**
	Groups total		**26**	**13.9650%**

KEYS

RQ	**Research Question**
CATs	**Categories**
S-CATs	**Sub-Categories**
FREQ	**Frequency**
%GE	**Percentages**

Category 1- Ineffective infrastructural facilities

Ineffective infrastructural facilities (23/172; 12.22%) category includes narratives related to the experiences of Faculty Members about the infrastructural facilities used to access DISS. This category is divided into seven sub-categories: difficult to connect (2/172; 1.16), LAN is not working (2/172;1.16%), network problem when using LAN (3/172; 1.74%), power problem when using LAN (5/172; 2.91%), the service is not extended to other parts of the institution (4/172; 2.33%), wireless is not effective (3/172; 1.74%), no access to wireless connection (2/172; 1.16%).

These seven sub-categories are explained below.

Difficult to connect LAN: this subcategory explains the infrastructural facilities related to the question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who feel it is difficult to connect to the Internet using LAN. A Lecturer I from the Accounting Department, Faculty of Administration narrated: "we usually have challenges, we have cases where it will just go off and when we try to connect it becomes so difficult to connect and on very few occasion we get some of the technical people to come and fix it". Another Faculty Member; a Senior Lecturer from the same department said "If I put the cable on it will take a life time for it to come on"

LAN is not working, it is useless: this subcategory explains the infrastructural facilities related to the question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who said because LAN does not work therefore it is useless. A Lecturer II from Local Government Department, Faculty of Administration narrated: "LAN is a shadow of itself for some months now it has not been working so, nobody is even using it as far as this department is concerned" Similarly a Senior Lecturer from the Department of Accounting narrated:" I don't think the LAN works at all. I mean, if I put this cable on it will take a life time for it to come on that is if it ever come on. I don't use the university facilities and If I don't use it, it means it is useless because this is free (university) I m spending money there (pointed to his router) every month I spend nothing less than 10 thousand naira on Internet"

Network problem when using LAN: this subcategory explains the infrastructural facilities related to the question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who said they usually experience network problem when using LAN. A Lecturer I from Local Government department, Faculty of Administration narrated: "The network is very sluggish, sometimes when you fix the cable, it will not respond quickly" similarly a response from an Assistant Lecturer from Economics Department, Faculty of Social Science is as follows: "the cable is not very effective because it goes off intermittently may be because of network problem"

Power problem when using LAN: this subcategory depicts explanations about the experiences of Faculty Members on the infrastructural facilities provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who feel the infrastructural facility provided by ABU is ineffective because of power problem. A Lecturer I from Local Government Department, Faculty of Administration narrated that "My problem with LAN cable is that when there is no light I cannot work and at times throughout the day, it is not working". A similar response by another lecturer I from the Department of Political Science and International Relation, Faculty of Social Science stated that "The cables have not been very effective because once the light goes off I cannot use it. In the Faculty of Social Science a Lecturer I from Economics Department said "We have electricity problem which does not make the cables work when it is mostly needed"

The service is not extended to other parts of the institution: this subcategory depicts explanations about the experiences of Faculty Members on the infrastructural facilities provided by ABU to access DISS. This subcategory is observed from the following narratives by

participants who feel the infrastructural facilities provided by ABU are ineffective because the service is not extended to other parts of the University. A Senior Lecturer from Accounting Department, Faculty of Administration said " It is not only the school here that should have access to ABU infrastructural facilities, by now our homes in the quarters and student hostels should be wireless. 24/7 we should be accessing this system". A similar response by a Lecturer I from the Faculty of Medicine, Pediatrics Department is as follows: "I think they have installed cables, fiber cable in almost all the office that are attached to the lecture halls, but in the other offices that are remote from the lecture halls, the cable do not extend there that is why when we were around that area especially when we are in the wards where we also do some part of teaching it may not be possible to access the Internet that is why we now had to resort to using personal Internet subscription"

Wireless is not effective: this subcategory depicts explanations about the experiences of Faculty Members on the infrastructural facilities provided by ABU to access DISS. This subcategory is observed from the following narrative by a participant who feels the infrastructural facilities provided by ABU are ineffective because the wireless is not effective. A Lecturer II from Faculty of Administration, Local Government Department said "Wireless comes intermittently so we monitor when we see signal, we click and in the process of accessing it can just go off"

No access to wireless connection: this subcategory explains the infrastructural facilities related to the sub question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who feel the infrastructural facilities provided by ABU are ineffective because they do not have access to wireless connections. A Lecturer I from Accounting Department, the Faculty of Administration narrated: "we use to have access to wireless connection in the past, but

not so for now" similarly a Lecturer I from Public Administration Department said "we don't have this access to use the University wireless, it was an extra effort by the Department so they have to buy one gadget called router and what have you. So, now you can be able to get access to it. If you are here and there is light you see some students browsing with their phones."

Category 2- Improved Internet infrastructure

Improved internet infrastructure (2/172; 1.16%) category includes narratives related to the experiences of Faculty Members about the infrastructural facilities used to access DISS. This category has only one sub-category: ABU Internet infrastructural facilities have improved (2/172; 1.16). This sub-category is explained below.

ABU Internet infrastructural facilities have improved: this subcategory explains sub question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed from the following narratives by participants who feel the ABU Internet infrastructural facilities provided by ABU has improved based on their experiences. A Microbiology Lecturer I from the Faculty of Medicine narrated that "Before now it was not really smooth compared to the MTN that I used, but recently there is improvement with regards to ABU Internet facilities" In a similar view, an Economics lecturer who is a Reader in the Faculty of Social Science explains his experience "Yes! Eh! ABU has provided this fiber optics/cables that are in the offices initially they were trying to make us go wireless but was not very effective but with this cable connections using the fiber optics at least the service of this digital going has improved"

Category 3- Limited computer access for faculty

Limited computer access for faculty (1/172; 0.58%) category includes narratives related to the

experiences of Faculty Members about the infrastructural facilities used to access DISS. This category has only one sub-category: No provision of computers to staff (1/172; 0.58%). This sub-category is explained below.

No provision of computers to staff: this subcategory explains question about the experiences of Faculty Members about the infrastructural support provided by ABU to access DISS. This subcategory is observed by a participant; a Lecturer I from the Faculty of Administration who feels the management of ABU should provide infrastructural facilities like computers for staff so as to have easy access to DISS. He said " …the only thing is there are certain challenges like there is no support like laptop and others, even desktop you have to buy it yourself".

4.2.4 The Digital Library Resources and Services Faculty Members are aware of in KIL

This part seeks to find out the DLRS that Faculty Members in ABU are aware of in KIL. The categories and the sub-categories are explained in Table 4.2.7

Table 4.2.7: Awareness of DLRS by Faculty members in ABU

RQ	CATs	S-CATs	FREQ	%GE
What are the DLRS faculty members aware of in ABU?	1. Aware of DLRS	1.1 I am aware of online databases	16	9.3023
		1.2 I am aware of MTN e- library	2	1.1628
		1.3 I am aware of IR	2	1.1628
		1.4 I am aware of offline databases	5	2.9069
	Group total		**25**	**14.5348%**
	2. Unaware of DLRS	2.1 I am not aware of any DLRS	2	1.1628
	Group total		**2**	**1.1628%**
	Groups total		**27**	**15.6976%**

KEYS

RQ Research Question

CATs	**Categories**
S-CATs	**Sub Categories**
FREQ	**Frequency**
%GE	**Percentage**

Category 1- Aware of DLRS

Aware of DLRS (25/172; 14.53%) category includes narratives related to the DLRS Faculty Members in ABU are aware of. This category has four sub-categories: I am aware of online databases (16/172; 9.30), I am aware of MTN e- library (2/172; 1.16%), I am aware of Institutional Repository (2/172; 1.16%), I am aware of offline databases (5/172; 2.91%). These sub-categories are explained below.

I am aware of online databases: this subcategory depicts narratives related to the awareness of DLRS by Faculty Members in ABU. Faculty Members interviewed were aware that there are on-line databases in KIL. ScienceDirect, DOAJ, DOAB, AJOL, JstoR, Bioline, HINARY and AGORA were the online databases mentioned by the respondents which cut across the three faculties used for this study. A Local Government Lecturer II from the Faculty of Administration said "Yes I'm aware of one, which I forget the name that they give us these thing… Ok, this one DOAJ, Ok but the one I am familiar with are online database DOAJ, DOAB and then AJOL"

I am aware of MTN e- library: this subcategory explains the narrative related to awareness of DLRS by Faculty Members in ABU. This subcategory is observed from the following narratives by Faculty Members who said they are aware of the MTN e- library. A Senior Lecturer from the Faculty of Social Science said "I only attended workshop there in the MTN E library that is how I got to know about it, and I know that they have Digitalized skill, it contains everything, it contain books". Another response by a Local Government Lecturer II from the Faculty of

Administration, stated that "I have never accessed the MTN e-library, I only heard of it, the modality, the manner, the approach at which I can access it I don't know"

I am aware of Institutional Repository (IR): this subcategory depicts narratives related to the awareness of DLRS by Faculty members in ABU. Faculty Members interviewed were aware that there is IR in KIL. One of the respondents; a Lecturer II from the Department of Local Government, Faculty of Administration said "Institutional repository, Yeah, I heard of it but I don't know how it works. I think there was a time they circulated a circular in the institution… but I don't remember"

I am aware of offline Resources: this subcategory depicts narratives related to the awareness of DLRS by Faculty Members in ABU. Faculty Members interviewed were aware of the off-line resources in KIL. Encanta, CD –ROM search and Audio and Media Division are the off- line resources mentioned by the respondents. An Assistant Lecturer from the Department of Economics, Faculty of Social Science narrated "I know in KIL they have this, is it CD- ROM search unit, I don't know, yeah! But even that I only went there once, although as a student"

Category 2- Unaware of DLRS

Unaware of DLRS (2/172; 1.16%) category includes narratives related to the DLRS Faculty Members in ABU were not aware of. This category has only one sub-category: I am not aware of any DLRS (2/172; 1.16%). This sub-category is explained below.

I am not aware of any DLRS: this subcategory explains the narrative related to awareness of DLRS by Faculty Members in ABU. This subcategory is observed from the following narratives by two participants who said they are not aware of any DLRS provided by ABU. A Lecturer I from the Faculty of Social Science, Economics Department narrated "I don't know what they

have. Sometimes I don't go to the library for the whole semester" A similar response by a Senior Lecturer from the Faculty of Administration, Accounting Department stated that "Zero. I went to make an effort and it was fruitless so how can I be aware of what they have"

4.2.5. The reasons for nonuse of Digital Library Resources and Services by Faculty members in ABU

This section seeks to uncover the reasons for the nonuse of DLRS by Faculty Members in ABU. The categories and sub-categories are explained in Table 4.2.8

Table 4.2.8: Faculty Members' reasons for nonuse of DLRS

RQ	CATs	S-CATs	FREQ	%GE
What are the reasons for the nonuse of DLRS by Faculty members in ABU?	1. Lack of communication	1.1 Nobody informed us of its existence in the library	5	2.9069
	Group total		**5**	**2.9069%**
	2. Hospitality	2.1 I was not well attended to in the library	5	2.9069
		2.2 Others	1	0.5814
	Group total		**6**	**3.4884**
	Groups total		**11**	**6.3953%**

KEYS

RQ	**Research Question**
CATs	**Categories**
S-CATs	**Sub Categories**
FREQ	**Frequency**
%GE	**Percentage**

Category 1- Lack of communication

Lack of communication (5/172; 2.91%) category includes narratives related to the experiences of Faculty Members on why they do not use DLRS in ABU. This category has only one sub-category: no body informed us of its existence in the library (5/172; 2.91%). This sub-category is

explained below.

Nobody informed us of DLRS existence in the library: this subcategory explains the narrative related to the experiences of Faculty Members in ABU on the nonuse of DLRS. This subcategory is observed from the following narratives by participants who do not use the DLRS because there was no information passed to them that DLRS exist in the library. A Lecturer I from the Faculty of Administration, Public Administration Department narrated "There are so many things that I don't know pertaining the issue of this library services. It is just now I am getting to know so many things, I am so surprise, I was looking for information maybe immediately when I come tomorrow, I will go and search in the library. Like I said it already, "lack of information", lack of awareness. That is the fact. If I have something at my doorstep why should I move somewhere else? Why should I buy textbooks?" A similar response by an Assistant Lecturer from the Department of Economics, Faculty of Social Science stated "Well! Firstly I will say there is no information passed to staff about the existence of DLRS in the library. It is lack of awareness; to me most people don't know of its existence. They are not even aware there are such materials in the school so the awareness was not created among staffs"

Category 2- Hospitality

Hospitality (5/172; 2.91%) category includes narratives related to the experiences of Faculty Members on why they do not use DLRS in ABU. This category has only one sub-category: I was not well attended to in the library (5/172; 2.91%). This sub-category is explained below.

I was not well attended to in the library: this subcategory depicts explanations about the experiences of Faculty Members on the nonuse of DLRS. This subcategory was observed from the following narratives by participants who due to the treatment received from the library staff

discouraged them from knowing what DLRS is available in KIL and thereby not using it at all. A Senior Lecturer in the Department of Accounting, Faculty of Administration lamented: "There was a time I wanted to download some books I wanted to get from JstoR database and they kept on referring me to the University library, that's why I went to the University library and nobody attended to me. When I got someone willing to talk to me, he doesn't know what I was asking for and couldn't direct me to the appropriate section where I can get it. Since then I stopped going there" Another Lecturer I from Economics Department, Faculty of Social Science narrated his experience " the attitude of librarian here put me off, I once went to the library to inquire about one of the DLRS- JstoR to be precise, the reception I got was so cold that I vowed not to go there again. It is now I am getting to know they have it in KIL (probably the person I met doesn't know about it). I am currently undergoing my PhD program in the University of Ibadan and once you enter their library, they make you feel at home and provide you with all the necessary materials you want".

4.2.6 The constructs of PAIT explaining experiences of Faculty Members in ABU on nonuse of Digital Library Resources and Services

This section seeks to find out how the construct of PAIT explain the experiences of Faculty Members in ABU. The categories and the sub-categories are explained in Table 4.2.9

Table 4.2.9: Experiences of Faculty Members on the nonuse of DLRS using the PAIT

RQ	CATs	S-CATs	FREQ	%GE
How does the constructs of Perceived	1.Relative Advantage	1.1 Power constraint	3	1.7442
		1.2 I can always get what I need from other sources	3	1.7442

Attributes of Innovation Theory (PAIT) explain the experiences of faculty members in ABU on the non use of DLRS?		1.3Accessibility problem	4	2.3256
		1.4 The DLRS is not close to us	2	1.1628
		1.5 Bad network	3	1.7442
	Group total		**15**	**8.721**
	2.Trialability	2.1Convenience (time)	7	4.6976
		2.2 Colleagues from abroad assist me to get materials I need for my research	2	1.1628
		2.3 Nobody informed us on how it works	3	1.7442
	Group total		**12**	**5.8604**
	Groups total		**27**	**15.6977%**

KEY	
RQs	**Research Questions**
CATs	**Categories**
S-CATs	**Sub-Categories**
FREQ	**Frequency**
%GE	**Percentage**

Category 1- Relative advantage

Relative advantage (15/172; 8.72%) category includes narratives related to the experiences of Faculty Members on why they do not use DLRS in KIL. This category has five sub-categories depicting power constraint (3/172; 1.74%), I can always get what I need from other sources (3/172; 1.74%), accessibility problem (4/172; 2.33%), the DLRS is not close to us (2/172; 1.16%), bad network (3/172; 1.74%). These sub-categories are explained below.

Power constraint: this subcategory depicts explanations about the experiences of Faculty Members on the nonuse of DLRS in ABU. This subcategory is observed from the following narrative by participants who are of the opinion that electricity should always be at a standby in order to enjoy the service. A Senior Lecturer from the Department of Political Science and International Relation, Faculty of Social Science said "Another problem here is, you know this

power issue, if there is no power you cannot browse. You can always use a text book without light".

I can always get what I need from other sources: this subcategory depicts explanations about the experiences of Faculty Members on the nonuse of DLRS in ABU. This subcategory is observed from the following narrative by participants who felt that if they can get materials from other sources why bother about DLRS? A Reader from Economics Department, Faculty of Social Science narrated "All what I need, I get them online provided they are uploaded to the Internet. I don't even go there (to the library). I have all what I need; I see no need going there". A Senior Lecturer from the Department of Political Science and International Relation, Faculty of Social Science said "if I can get what I want from our own source here in the Department, we are up to date here, modern books, apart from modern books we have our own browser why do I need to go to the library for DLRS". A Lecturer I from the Department of Pediatrics, Faculty of Medicine also shared the same view as his counterparts from other faculties. He said "It all depends on the need and if the need arises. Since there are other sources, like print materials that I can easily lay my hands on"

Accessibility problem: this subcategory explains the narrative related to the experiences of Faculty Members in ABU on the nonuse of DLRS. This subcategory is observed from the following narratives by participants who said that getting access to DLRS is a problem. An Accounting lecturer from Faculty of Administration narrated "What I know about the KIL is while I was doing my PhD, at that time I looked around I don't have access to digital library facility and I was directed to Kennedy library. I went there, there was a particular room where an officer will be there to help us, link us to the website where we could get the materials and then all we did was to download whatever we needed and they print it for us I think that was the kind

of access that was of help to me. I do not have direct access. It is not convenient for me as each time I have to be going to the library; meanwhile there are some resources that can equally help especially on-line without going to the library either through Google or whatever".

A similar view of getting access to DLRS was narrated by a Lecturer II from the same Faculty, Local Government Department " the idea of how to access it is the main reason for not using the DLRS, it is just now that you are telling me that I can be here and access it. Nobody came to educate us as to how we can sit down here and have access to it unlike Google that you don't need any one to put you through". A different view about the problem of accessibility was related to network and the cost incurred in having access. A Lecturer I from the Department of Local Government, same faculty narrated "It is not that I don't want to use it. I want to use them. It is because I have limited access to availability. I told you about this server thing. So I don't know and I cannot be buying 3000 naira Internet access, because I can even use it in a day or two, it depends on what you are going to download. If I'm using the cable provided by the campus, I can use it 24/7 because in my leisure time I can download as many as I want to but since I'm using my MODEM I can't do that, I will just open my mail and see if there is something new that I have to respond to, if there is a journal I wanted to access, or an article I'm writing and so on I will just go there direct and browse so that I would not exhaust my data… one has to be very conscious. I am constrained by the accessibility of it. It came with a cost and a heavy cost for that matter especially if the cable is not working, but if it is working, my dear somebody can even stay in the office for a long time and not even know".

DLRS is not close to us: this subcategory explains the narrative related to the experiences of Faculty Members in ABU on the nonuse of DLRS. This subcategory is observed from the following narratives by participants who said proximity to the DLRS is their main reason for not

using it. These responses are from Faculty Members who are not in the main campus of ABU. Their responses: A Lecturer II from the Faculty of Administration, Local Government Department narrated "The facility is not close to us. Sometimes it might be a whole month, nothing to do in Samaru, how will I go there? You understand? Besides, it is what you know that exist and you have idea of how it works that you will try to see. If we have it in the Kennedy library here it is very close to us and very easy, except now that you are telling me I can be here and I can be accessing that one in Samaru". A Microbiology Lecturer I from the Faculty of Medicine, who knows he can access it remotely but is more concerned about getting the code lamented: "Samaru is far, you know going to Samaru when you have a lot of work here. It is not easy especially when you have to go because of this CODE. You know you have to get the CODE from KIL. I think that is my major problem. If you eventually succeed in getting the CODE, before you know it they have changed it, so you have to keep checking over and over again. So this changing of CODE, when you now want to use it, it became an issue and you became fed up"

Bad network: this subcategory depicts explanations about the experiences of Faculty Members on the nonuse of DLRS. This subcategory is observed from the narratives of Faculty Members who share the same view concerning the epileptic network in ABU. A Lecturer I from Faculty of Administration, Public Administration Department said "If you have the Internet connection always available via the cable or wireless, you can be able to browse and get the information 24/7 but reverse is the case with ABU Internet facilities especially here in Kongo campus". A Senior Lecturer from the Department of Political Science and International Studies, Faculty of Social Science said "sometimes there will be no network for two days, we don't know, we feel the trees here block communication, will I not work because there is no network? After all I was

doing research and teaching before all these internets came so I make do with other sources that will not require network and power"

Category 2- Trialability

Trialability (12/172; 6.98%) category includes narratives related to the experiences of Faculty Members on why they do not use DLRS in ABU. This category has three sub-categories: convenience (time) (7/172; 4.70%), colleagues from abroad assist me to get materials I need for my research (2/172; 1.16%), nobody informed us on how it works (3/172; 1.74%). These sub-categories are explained below.

Convenience (Time): this subcategory explains the narrative related to the experiences of Faculty Members in ABU on the nonuse of DLRS. This subcategory is observed from the following narratives by participants who felt that time constraints hindered them in trying the DLRS in KIL. A Senior Lecturer from the Department of Political Science and International Relation, Faculty of Social Science said "No, because of time constraint you have the next class to attend, you have defense to attend, and students are waiting for you all those things have reduced your time. If you can get what you want without going to the library, to me other ones are regarded as time wasting,…You see me now, see what I am doing, I am marking MIAD, and why am fast on it is that more are coming and I don't want to get confused". Another Lecturer I from the department of Economics, Faculty of Social Science narrated "No! It is the time constraint actually yes! and convenience because I had to go to the Library. I can easily get other stuffs to use here at my convenience without going to the library". A Lecturer II from the Faculty of Administration, Local Government Department narrated "As academic staff we would be busy for instance I have classes everyday Monday – Friday at all levels. And after my class when

I am suppose to take a rest, then I will start going to Samaru, it is something that is not easy, there is no time to try it out"

Colleagues from abroad assist me to get materials I need for my research: this subcategory explains the narrative related to the experiences of Faculty Members in ABU on the nonuse of DLRS. This subcategory is observed from the following narratives by Faculty Members who felt that getting material from colleagues to do their research has prevented them from trying the DLRS in KIL long enough to know what it is capable of doing. A Lecturer I from the Faculty of Administration, Accounting Department narrated "Yes, I have tried to use it (I – okay) because I remember I think I even use that ScienceDirect, but I find it easier to liaise with colleagues, in other foreign universities that have free access. I will just give them the area and request them to send me material on what I need and they will send them from various libraries abroad and I will just use it for my research. So, that one also makes me not to bother much about the challenges around". In a similar response, a Lecturer I from the same faculty, Public Administration Department narrated "sometimes our colleagues that travel outside give us privilege information. Somebody gave me one website and I was able to download textbooks from there, but I have never tried these services in ABU Zaria except the one I told you about when I was doing my PhD. Also, when I was conducting my research, there was one book I saw is around $150. My colleague gave me some website, and also his access code to the University library I was able to download it free".

Nobody informed us on how it works: this subcategory depicts explanations about the experiences of Faculty Members on the nonuse of DLRS. This subcategory is observed from the following narrative by participants who do not use the DLRS because there was no body to inform them on how they can use it. A Lecturer II in the Department of Local Government,

Faculty of Administration narrated “maybe I would have tried it if somebody had come to educate me as to how I can sit down here and have access to it or how to use it generally unlike Google that you don’t need any one to put through”. Similarly, in the same faculty, a Lecturer I from the Department of Public Administration said “I don’t use it often. Sometimes it is just a communication gap, there are certain things, maybe, if you want information, you get it close to you, if I don’t know there should be somebody to explain to me how to use it, so that I will try it and subsequently, get to use it.”

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CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This research represents a contribution to the Diffusion of Innovation (DOI) literature by exploring the applicability of Rogers's theory of innovation diffusion as it relates to perceived attributes of DLRS. In the context of the DLRS, this study fills the theoretical gap by uncovering other relevant factors that influence the nonuse of DLRS among Faculty Members in ABU. This chapter therefore, discussed several major findings related to nonuse of DLRS.

5.2 The experiences of Faculty Members in ABU about Digital Information Sources and Services.

In ABU Zaria, participant's experience about DISS is predominantly related to two activities, they are; everyday life communication activities and scholarly activities. This finding showed that Faculty Members interviewed are technology savvy. Considering the increase usage of computers and information technology in education in the twenty first century, Faculty Members are able to make use of their computers in any form (Personal Computers (PC), laptop, ipad, iphones e.t.c) to carry out their day to day communication and scholarly activities with no stress. Also, information technology and communication are part of education, therefore, the role of DISS in the teaching and research process cannot be denied. Faculty Members are becoming aware of the fact that DISS have become an invaluable asset in education in the sense that it has transformed the conduct of research and teaching in universities by allowing them a wide range of opportunity for accessing timely information on various subjects.

The fact that participants are technology savvy is not surprising because first, the university has installed fiber optics cable across the campuses for Internet services and has initiated the provision of computers, laptops e.t.c to Faculty Members even though some departments do not benefit from this. Apart from this, series of workshops have been held by ICT Unit and Library to make them technology savvy. Secondly, Faculty Members across the globe are technology savvy. For example, in the developed countries Faculty Members have adopted digital technology for everyday life communication and scholarly activities (Leelavathi and Doraswamy (n.d), Aldojan (2007), Thanuskodi and Ravi (2011), Thanuskodi (2012), Chandran (2013) and Siamian, Yaminfirooz, Dehghan and Shahrabi (2013). Likewise, at the beginning of the twenty first century, their counterparts in the developing countries have also accepted digital technology for everyday life communication and scholarly activities (Atilgan and Bayram (n.d) and Owolabi, Ajiboye, Lawal and Okpeh (2012). It is imperative to say that since technology has

diffused among scholars, Faculty Members are now using the technology to access information in digital format.

The fact that participants are technology savvy that is, using digital technology to access information for everyday life communication and scholarly activities has implication for information access. First, academic institution can provide information in digital format. Second, digital technology is a potent channel for easy diffusion of information because it provides easy access to information, therefore, technology savvy scholars can easily get the opportunity to access timely information on various subjects to carry out and improve the quality of their research and teaching and possibly increase the use of DLRS. Below are the explanations of the themes related to research question one:

Everyday life communication activities: Everyday life is that routine Faculty Members engage in aside their primary assignments which is research and teaching, such as communication via e-mail, chatting, social interaction on facebook, online shopping and e-payment.

Scholarly activities: The experience of participants about DISS is also rooted in scholarly activities. Scholarly activities is related to research and teaching. Faculty Members' primary assignment is to teach and carry out research. Hence in ABU, participants consult generalized search tools like Google search and yahoo search, academic search tools like SSRN and Google scholar and specialized databases like ScienceDirect, HINARY and JstoR. However, from the finding of this study, Google search and Google Scholar are the most widely used search tools for both everyday and scholarly activities of participants.

5.3 The infrastructural facilities Faculty Members in ABU use to access Digital Information Sources and Services.

The infrastructural facilities participants use to access DISS are the University fiber optic/LAN cable provided by ABU and MODEM which is personally acquired by Faculty Members. These are categorized as capital and less capital intensive technologies respectively. Apart from the computers in various forms that participants use to access the DISS, the ABU university management in an effort to do their best in order to provide their users access to enormous reservoir of information has put up a lot of resources to provide infrastructural facilities for Faculty Members in order to be able to access DISS in the three campuses (Samaru, Kongo and Shika). The infrastructural facilities provided by ABU to access DISS are the fiber optic/LAN Cable, router for wireless connections (the Faculty Members rarely use the wireless) and the initiation for the provision of personal computers in various forms. However, to complement the effort of the university management, Faculty Members acquired infrastructural facilities such as personal computers, ipad, iphones and MODEM to access DISS irrespective of their location and to overcome the deficiency of the infrastructural facilities provided by the university especially its restriction to offices and some part of the university environment. This finding is not different considering the submissions by other scholars who noted that the participation of universities management has tremendously encouraged the adoption and use of DISS by providing necessary infrastructural facilities for Faculty Members to have access to information (Msagati, 2014). The infrastructural facilities provided by university management and the personal effort of Faculty Members corroborate with other literary findings revealing that providing access to information has made remarkable impact on the academic activities of Faculty Members and pave ways for a consistent and systematic ways Faculty Members seek information and the diverse methods they use in research and teaching activities (Thanuskodi

and Ravi, 2011; Siamian, *et al*. 2013).

The provision of infrastructural facilities by the university management for Faculty Members and the Faculty Members' personal effort to acquire infrastructural facilities to access digital information has implications. First, it saves the Faculty Members a lot of cost because the infrastructural facilities like the fiber optic/LAN cable provided by the university management is capital intensive. For instance, the cost of procurement, installation and maintenance of these infrastructural facilities are quite enormous and no individual can afford it. Second, Faculty Members can have access to DISS at any time irrespective of their location- the fiber optic/LAN cable and wireless connection allow access to the DISS in the university environment while the personal MODEM allow access to DISS when they are not in the university environment. The categories related to research question two are explained below:

Capital intensive technologies: Capital intensive technologies are infrastructural facilities that are not affordable by any individual. They are provided by the university management for staff and students to access DISS. This is fiber optic/LAN cable- no single Faculty Member can afford the cost and rigor of putting it in place- procurements, installation and maintenance. Faculty Members mostly use the university LAN cable to access DISS. Although wireless technologies are in place for Faculty Members to use but most of the Faculty Members interviewed were not aware that it exist and the ones that knows about it still prefer to use the LAN cable because it only come intermittently and as such not effective.

Less capital intensive technologies: Less capital intensive technologies are infrastructural facilities that Faculty Members personally acquire to access DISS. These are personal computers, ipad, iphones, personal MODEM and router for wireless connection. They are referred to as less

capital intensive because Faculty Members can easily afford it. Most Faculty Members do not stay on campus and apart from that most of the capital intensive technologies are not extended to the quarters for those that reside on campus. Therefore, there is need to have their own MODEM so that they can do research and prepare for lectures at their leisure. Also, a department was able to get a router for wireless with their personal effort. A Faculty Member interviewed has his personal router for wireless connection because he feels the university wireless is ineffective and surprisingly the Faculty Member showed the researcher his personal router for the wireless. In most cases, the less capital intensive technologies resolve the ineffectiveness of the university infrastructural facilities.

5.4 The experiences of Faculty Member about infrastructural facilities provided by ABU to access Digital Information Sources and Services.

Participants experience about the infrastructural facilities provided by ABU is related to the ineffective nature of the facilities. Faculty Members interviewed see the infrastructural facilities provided by ABU as ineffective because it is either LAN is difficult to connect or it is not working, network problem and power problem when using LAN, the service is not extended to other parts of the institution, wireless is not effective or no access to wireless connection at all.

In most developing countries, the technologies to access digital information are in place but not effective. The ineffective nature of these technologies is mostly attached to the network and power problem. Most countries in the developing world especially Nigeria cannot boast of 24 hours of power in a day and this is mostly seen as a hindrance to the effective use of DISS. This has also been a persistent problem militating against ICT application and usage in Nigeria till date. (Chandran, 2000; Adomi, Omodeko and Otlo, 2004; Adomi, 2005; Abdullahi and Haruna, 2008; Pragya and Rabrindra, 2013; Velmurugan, 2013; Aina, 2014; Akpojotor, 2016)

The ineffective nature of the infrastructural facilities provided by ABU has implications. First, slow network frustrates Faculty Members' effort to use DISS thereby making them look for alternative sources which may not serve the purpose for which digital information is intended that is- their research and teaching will not be current and up to date. Second, the digital information provided by the library will be underutilized. Third, the fact that participants are technology savvy means that if infrastructural facilities challenges are addressed, DLRS will be optimally used thereby justifying the cost of investment. Below are the explanations on the categories related to research question three:

Ineffective infrastructural facilities: The infrastructural facilities provided by the university is ineffective because it is affected by consistent power failure, network problem, not able to connect to wireless or it is not there at all, and the non-extension of these facilities to some parts of the university environment such as the quarters, and the wards in ABUTH Shika and some other areas where teaching and learning takes place.

5.5 The Digital Library Resources and Services Faculty Members in ABU are aware of

DLRS that participants are aware of in KIL are: online databases, offline databases, IR and MTN e-Library. However, some participants are not aware of any DLRS in KIL.

Faculty Members in ABU were aware of DLRS in KIL for learning, teaching and research. These are: online databases (such as ScienceDirect, DOAJ, DOAB, AJOL, JstoR, Bioline, HINARY and AGORA), offline resources (such as CD-ROM search, Encarta), IR and MTN e-library. Other DLRS like Ask the librarian, OPAC and media services are not known to the participants. However, some participants are not aware that DLRS exist in KIL even though they know about.

According to Rogers (2003), the innovation-decision process (one of the theory of diffusion) begins with the Knowledge Stage. In this stage, a person first becomes aware of the technology possibly because he has seen someone use the technology in real life, have been informed by a peer or mentor, or have seen the technology advertised on television or read about it in a magazine or on the web. Faculty Members globally are aware of DLRS (Velmurugan, n.d; Weingart and Anderson, 2000; Renwick, 2005; Khan, 2016). However, this finding is not surprising as effort has been made globally to create awareness to ensure that scholars and researchers in Africa can access the growing quantities of information produced in electronic format (Msagati, 2014). Efforts such as negotiation with publishers resulting in electronic journals and databases being made free or at a discount price through programmes like AGORA, HINARI, TEEAL, OARE e.t.c (Rosenberg, 2006). From the outcome of this study, it is obvious that participants are more aware of the online databases which are specialized because of its potential benefits in scholarly communication. Some participants, however, are not aware that DLRS exist in KIL even though they know about it. This is not surprising as the leading reasons for nonuse of resources have been identified by scholars to include lack of awareness (Killu and Otike (2016).

DLRS saves physical storage, enhances different searching capabilities, speed up both access and delivery of articles to readers. However, having the knowledge that it exist thus has implications. First, if Faculty Members are not aware of DLRS in the library, they will not use it. It is only when DLRS is put into use its benefits will be appreciated. Therefore it is important that enough awareness is created. Second, the awareness of DLRS in KIL is only complete when other DLRS such as IR, MTN e-library, Ask the librarian, OPAC and media services are fully known and

patronized by Faculty Members. Below are the explanations on the categories related to research question four:

Aware of DLRS: Participants are aware of the DLRS such as the online databases, offline databases, IR and MTN e-library. The online resources are the DLRS participants are mostly aware of while few are aware of offline databases. Their reason is that they hardly visit the library. Very few Faculty Members are aware of the IR and the MTN e-library especially those that are not on Samaru campus where the MTN e-library is located.

Unaware of DLRS: Some Faculty Members interviewed have general knowledge about DLRS but are not aware that it is provided by KIL. Their reason is that they do not visit the physical library to know what is available and as far as they are concerned, these services do not exist. However, these services are available and accessible through the library website. It is obvious that participants do not look out for these services because they do not know it exists on the library website or they do not visit the library website at all.

5.6 The reasons for nonuse of Digital Library Resources and Services by Faculty Members in ABU

Factors such as lack of communication and hospitality were discovered as the reasons hindering the effective use of DLRS by participants. These factors are encountered before getting to use DLRS. Using an innovation is one thing and getting to use the innovation is another. Getting to use the innovation is the first step before using the innovation itself. However, some of the participants do not get to use the DLRS because of these factors.

The first factor-"Lack of communication" affirms Rogers's diffusion of innovation theory which stated that innovation is communicated through certain channels over time among the members

of a social system (Rogers, 2003). Therefore, it is not surprising to find out that lack of communication is a hindrance to the use of DLRS by participants. Lack of communication of what digital resources and services is available in the library and the skills on how to use them have been reported as user- centered barriers to digital resources use (Ojo and Akande, 2005; Pragya and Rabrinda, 2013; Olasore and Adekunmisi, 2015).

The second factor "Hospitality" is also very important in getting to use an innovation. The image of the librarian has been identified as a direct motivator or de-motivator in the use or nonuse of the library resources and services (Mills and Bannister, 2001; Amjid and Shamsad, 2013; Killu and Otike, 2016). Studies have pointed out that the underlying problems resulting in users dissatisfaction in the use of library resources and services include negative perceptions of librarians: unapproachable busy library staff, poor employees' behaviours and their lack of competencies (Su, 2012; Nicholas, Sterling, Davis, Lewis, Mckoy-Johnson, Nelson, Tugwell and Tyrell, 2015) It is imperative that librarians and information professionals working to increase the utilization of DLRS must work to address these major factors discouraging Faculty Members from using the DLRS.

Implication of this is that the Faculty Member will not use DLRS if they are not notified of its existence in the library and how to use them to get optimal result. Also the importance of DLRS (such as their remote access) will not be made known to them as many of the participants got to know about this during their participation in the study. Second, lack of hospitality will always push Faculty Members further away from the library for those that will like to access the DLRS locally. However, for those that know about accessing DLRS remotely, the problem of getting access codes and other logistics remains a challenge. This could also give a wrong impression about the library as having no resources and services they can offer to their client. Third, Faculty

Members will rely more on their search on goggle ignoring the digital resources and services that university management have invested on to serve the purpose of effective teaching and research.

5.7 The constructs of PAIT explaining the experiences of Faculty Members in ABU on the nonuse of Digital Library Resources and Services in KIL

Two constructs of PAIT explained participants' nonuse of DLRS in ABU. These are relative advantage and trialability**.** The PAIT consists of five constructs: relative advantage, compatibility, complexity, trialability and observability. From the participants responses, it was clear that three of the constructs; compatibility, complexity and observability are not a reason for nonuse of DLRS. DLRS is compatible with their personal teaching and research philosophy in the sense that it enhances their teaching and research (compatibility), easy to use because they are technology savvy (complexity) and the result of its use is quite visible from colleagues both within and outside ABU (observability).

Relative advantage: Rogers (2003) defined relative advantage as the degree to which an innovation is perceived as being better than the idea it supersedes. Participants do not see any benefit of using DLRS that supersedes the use of DISS and print sources. Faculty Members interviewed are technology savvy and are quite comfortable with using their print sources and other DISS other than DLRS because they felt it is more convenient (thought they had to go to the library to access DLRS), cost effective (thought they had to pay for the DLRS) and they gain more satisfaction from using them.

Trialability: A trial period for an innovation is very important because it helps a user in getting used to the innovation. Rogers (2003) defined trialability as the degree to which an innovation may be experimented with on a limited basis. However, participants do not try the DLRS either on a limited basis or long enough to know or see what it is capable of doing; it could be blamed

on the facts that they do not know how it works and over reliance on their colleague from abroad to send the material they need to do research. Barriers that must be addressed comprise of appropriation of time and periodical hands on training of Faculty Members.

It is therefore not surprising that relative advantage and trialability are the attributes of innovation that could explain the causes of nonuse of DLRS by participants. In prominent diffusion research (Moore &Benbasat, 1991; Rogers, 2003; Venkatesh *et al.*, 2003), relative advantage was emphasized as the strongest predictor and essential innovation attribute in determining the rate of adoption of innovations. While trialability is also positively connected with the rate of adoption; the more an innovation is tried, the faster its rate of adoption is. It is however important to know where to try, the ability to try, and the empowerment to try or experiment adequately. Specifically, the attribute of relative advantage and trialability have been found by many scholars to influence Faculty Members use of technology (Yong, 2006; Almobarraz, 2007; Ntemana and Olatokun, 2012; Henderson, et al.; Cutler, 2013; Jwaifell and Gasaymeh, 2013), and in ABU, it is not an exception.

However, the remaining constructs: compatibility, complexity and observability do not determine the nonuse of DLRS by participants. For complexity and compatibility, the first finding of this research has established that participants are technology savvy as they use DISS for everyday life and scholarly activities. It is however not surprising that they do not feel DLRS is difficult to use because they are already conversant with the technology. Using DISS for scholarly activities has portrayed the DLRS as being compatible with their teaching and research philosophy. For the construct of observability, it was also established that the result of the effective use of DLRS is visible to the participants through their colleagues in other universities.

The nonuse of DLRS by Faculty Members based on the constructs of relative advantage and trialability has implications. First, Faculty Members will continue to patronize the DISS other than DLRS if its potential benefits are not made known to them. Second, Faculty Members will not use the DLRS if there is no proper training on how the DLRS work. Trying a new innovation involve adequate hands-on training. Training can also help a user group to be eager in trying an innovation. The training given to the Faculty Members in ABU on the use of DLRS is not adequate because only few Faculty Members were selected from each department for periodic organized training, and some of them get to know about the training only when it is over. This training activity however, does not take place on a consistent and regular basis. Below are the explanations on the categories (Relative advantage and Trialability) and their sub categories related to research question six:

Relative advantage: Relative advantage was used to measure the perceived degree of betterment attributed to an innovation in lieu of precursor ideas (Rogers, 2003; Robinson, 2009). However, there are no absolute rules for what actually constitutes "relative advantage", it depends on the particular perceptions and needs of the user group. Therefore, nonuse of DLRS by participants can be explained from their experiences ranging from issues related to power epilepsy, proximity, problems of accessing especially when they have to get the codes, bad networks and getting what they need from other sources other than DLRS. The subcategories are explained below:

Power constraint: given the situation in a developing country like Nigeria, power is a challenge and a cankerworm that is eating deep into the society- institutions of higher learning inclusive. Most of the tertiary institutions cannot boast of ten hours uninterrupted power supply. The situation is not different in ABU, Zaria. This has frustrated the use of DLRS by Faculty Members

in ABU especially if they want to use the infrastructural facilities provided by the institution. As earlier stated, participants were drawn from the three campuses of ABU viz: Samaru, Kongo and Shika. The participants from these campuses complained that epileptic power supply contributed to the nonuse of DLRS especially in Kongo. Though most of them have their personal MODEM which they can use to browse but the personal cost incurred is discouraging especially when they needed to download heavy data. Having to wait for power supply before you can do what you have to do is quite frustrating. A Faculty Member was doing research and teaching his students before the advent of DLRS. He has to teach his students with or without electricity because that is one of his primary assignments and he has to get his promotion with or without electricity. This, to the researcher constitutes the reason for the nonuse DLRS.

I can always get what I need from other sources: Participants believe they can always get what they need from other sources like prints and generalized databases forgetting that the DLRS is provided for them so as to be able to avoid inconvenience and cost and also to be able to have access to rich, quality and up to date information irrespective of their location. Libraries to some of the participants are for students they don't believe there is anything new that the library can offer other than what they already know since when they were students (for the Faculty Members that had their first degree in ABU). Most of the Faculty Members interviewed thought they had to go to the library physically before they can have access to the DLRS. They do not know that most of these services such as; online databases, IR, Ask the librarian, OPAC, MTN connect E-library are all available and accessible on KIL website via the university website. These, they can always access at their convenience and at no cost.

Accessibility problem: DLRS are not easily accessible to participants. Accessibility problem ranges from how to get to use the DLRS because nobody came to educate them that they can

have access to it remotely, the problem they had to face in getting CODES especially for online databases, proximity to the service especially for those that are not near Samaru which is the main campus. They believe they had to be in KIL physically to be able to have access to these services since most of the interviewed Faculty Members do not visit the ABU website, not to talk of accessing the library to know what is available for them. They all got to know about the remote access to DLRS from their interaction with the researcher. Some participants complained that some of the services uploaded on the website are not operational as confirmed by the researcher.

Bad network: Bad network is another major challenge reportedly blamed for the nonuse of DLRS by participants. Most of the Faculty Members interviewed complained that bad network constituted to their nonuse of DLRS. The bad network is mostly associated with low bandwidth. According to Cisco (2013), one of the common network problems is insufficient or unreliable bandwidth. Bandwidth is the maximum amount of information that can be transmitted along a channel. TechTarget (2015) defined bandwidth as the capacity or data transfer rate of a particular communication channel. Bandwidth is responsible for data transfer speed (Ndabezinhle, Mathebula, Benson, Gilbert and Madzima, 2014). Therefore, if a bandwidth has a bigger quota, the connection speed will be faster. Another challenge is that a bandwidth may have a big quota but may not be adequately managed. If the former and the later are so for any institution, then there is every possibility that the user of the Internet will complain of bad network.

Trialability: Trialability according to Rogers (2003) is the degree to which an innovation may be experimented with on a limited basis. This according to Sahin (2006) can give room to re-invention due to user judgment of the innovation during trial which can lead to changing or modification of an innovation. This can in turn create faster adoption of an innovation. The

nonuse of DLRS by participants can be explained from their experiences ranging from issues related to convenience, being assisted by colleagues from abroad to get materials needed for research and getting nobody to show them how the DLRS works. These issues have mired the participants from attempting to try the DLRS either on a limited basis or long enough to know or see what it is capable of doing. The subcategories are discussed below:

Convenience (Time): Faculty Members interviewed in ABU generally complained of inconveniencies that appear with accessing DLRS. This is mostly attributed to lack of time. This is one of the leading reasons for nonuse of resources in libraries (Renwick, 2005). Participants complained of having so much to do as students are increasing yearly. They engage more in administrative activities, yet they do their primary assignment (teach, conduct examinations, mark scripts, attend to students' research work and many other academic activities). They however pay little attention to their personal research which of course is the only criterion that determines their promotion.

Colleagues from abroad assist me to get materials I need for my research: participants liaise with colleagues from outside Nigeria to get materials for their researches. All they need to do is call their colleague and tell them what they need. Colleagues that go abroad to study are usually provided with all necessary facilities needed to access the library including the passwords and codes for their digital library at the point of registration as a student. They in turn use this opportunity to "help" their colleagues back in Nigeria that do not have "access" or "free access" as a participant thought you have to pay before accessing the digital library. This activity has barred some participants from wanting to try what is available. The researcher had to educate the participants that some of the material he mentioned was given to him by his colleague abroad is actually available in KIL waiting to be accessed.

Nobody informed us on how it works: some of the Faculty Members interviewed do not know how they can use the DLRS because there was no body that came around to inform them on how it works. This means they would have tried it if they knew how it works. However, the participants were able to learn about the remote access of the DLRS from the researcher during the course of the interview.

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CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter is presented under the following headings:

6.2 Summary of the Study

6.3 Summary of Major Findings

6.4 Contribution to Knowledge

6.5 Limitations of the Study

6.6 Conclusion

6.7 Recommendations

6.2 Summary of the Study

The main objective of this study was to explore and understand the reasons for the nonuse of DLRS by Faculty Members in Ahmadu Bello University Zaria. The first chapter presents the research problem and questions raised to achieve five specific objectives. Also, in this chapter, the significance of the study together with the scope and delimitations of the study were discussed.

Chapter Two of this study presents the literature review which discussed in detail the theoretical framework adopted for this study. The framework is Rogers's diffusion of innovation theory and specifically the Perceived Attribute of Innovation Theory was used to explore the reason for non use of DLRS by Faculty Members in ABU. The chapter went further to discuss the research paradigm and the previous studies that adopted the framework.

The study adopted a qualitative research method as contained in Chapter Three. The research methodology comprises research design which is case study, population were Faculty Members from three different faculties (social science, medicine and administration) using multiple sampling variation and purposely selected using the following criteria: Assistant lecturer and above, having knowledge about DLRS and have never used it (absolute non-user), have not used DLRS for the last six month prior to the day of the interview (marginal user). A sample size of 12 Faculty Members were chosen for analysis at the point of saturation. The study used FGD and in-depth interview for collecting data for the study as contained therein.

6.3 Summary of Major Findings

1. The experiences of Faculty members in the use of DISS are predominantly related to two activities: first, everyday life communication activities and second, scholarly activities**.**
2. The infrastructural facilities Faculty Members use to access DISS are the fiber optic/LAN cable and MODEM. Participants rarely use router/wireless.
3. Faculty Members experiences about the infrastructural facilities provided by ABU are related to the ineffective nature of the facilities**.**
4. The DLRS Faculty Members are aware of in KIL are online databases, offline databases, IR and MTN e-library. However, some participants are not aware of any DLRS in KIL.
5. The reasons for the nonuse of DLRS by Faculty Members in ABU were lack of communication of DLRS available and how it can be used and lack of hospitality on the part of the librarian.
6. Relative advantage and trialability were the main constructs of PAIT that explained the experiences of Faculty Members on the nonuse of DLRS in KIL

6.4 Contribution to knowledge

From the foregoing, the study establishes:

1. the development of two conceptual frameworks which were: lack of communication of available DLRS and hospitality as reasons for the nonuse of the DLRS by Faculty Members in ABU. These frameworks shall be potentially helpful for librarians and information professionals working to increase DLRS utilization. (Figure 3, appendix I)
2. that there are two constructs of PAIT; relative advantage and trialability that explained the nonuse of DLRS by Faculty Members in ABU. Therefore, DLRS designers in ABU are required to consider these constructs when designing DLRS so as to increase its utilization. (Figure 3, appendix I)
3. that the infrastructural facilities provided by ABU to access DISS were ineffective and need what must be done to expand and improve the infrastructural facilities such as alternative power supply and provision of larger bandwidth allocated to Faculty Members to access DISS.

6.5 Limitations of the Study

There were a number of limitations encountered in the course of carrying out this study. First, getting Faculty Members together for Focus Group Discussion (FGD) was very tasking. Several visits including phone calls were made to these faculties without much success initially. The former acting University Librarian who happened to be one of the researcher's supervisors had to accompany the researcher to one of the faculties before audience was finally granted in that faculty. All the FGD for the three faculties was eventually carried out. This was also time-consuming (the researcher used approximately 6 months for the running around; April-October,

2015). Second, the in-depth interview had its own challenges as some of the Faculty Members refused being interviewed either because they wouldn't want their voices to be recorded or they are too busy to grant interview. Third, the analysis was done manually, (though interesting as the beauty of qualitative research was visible) was very tedious and time-consuming because it involved an iterative process i.e. moving back and forth to ensure consistency in coding.

6.6 Conclusion

Several conclusions were drawn from this study that sought to explore the nonuse of DLRS by Faculty Members in ABU. This has brought forth findings that deserve the attention of university management, administrators, librarians and ICT division. First, it is established that Faculty Members interviewed are technology savvy in the sense that they can make use of digital technology to access digital information. Second, it revealed that the infrastructural facilities provided by the university management for use by Faculty Members were not effective when their experience about the infrastructures was sought. Third, on examining the DLRS the participants were aware of, only online databases, offline databases, IR and MTN e-library are known to them and some participants were not aware that DLRS existed in KIL. Fourth, the main reasons that prevented getting to use the DLRS were lack of communication (of what is available and how to use them) and also lack of hospitality from the part of the librarian. Finally, it was further established that relative advantage and trialability are the attributes of DLRS that explained their nonuse.

Nevertheless, the result of this study indicated that majority of the Faculty Members who were nonuser as at the time FGD was conducted now use DLRS as they couldn't be used for in-depth interview. This was because of the awareness created during FGD on its existence and the training given to them on basic searching skills which can facilitate the effective use of DLRS.

The findings of this study have provided useful insights for informing the university management who are policy makers in ABU to formulate appropriate policy that will persuade maximum utilization of the DLRS by Faculty Members in ABU. It has also established the basis for the designers of DLRS to design DLRS that will persuade and increase maximum utilization of the DLRS by Faculty Members in ABU. It has also established the basis for the library management to take proactive measures on marketing of DLRS and training users on how to use the DLRS with hospitality so as to achieve a higher level of awareness and increased utilization of DLRS by Faculty Members in ABU.

6.7 Recommendations

Based on the findings, the following recommendations were made:

1. The University management should further encourage the use of DISS for communication and scholarly activities by ensuring that all the necessary resources that have been provided to enhance teaching and research with digital technology are optimally utilized. This can be achieved by making it mandatory for all Faculty Members to have a computer, improving power supply especially on Kongo campus, increasing the bandwidth allocated to Faculty Members and encouraging citation of digital sources for promotion. This will go a long way to facilitate the use of DLRS in particular.
2. The university management has invested a lot in the installation of fiber optics cable which serve as a backbone to LAN. This should be expanded, sustained and properly maintained by making it more effective and connectivity available 24/7. The wireless should be given special attention to make it have a wider coverage so as to serve the Faculty Member both in their offices and homes (for those residing in the university

quarters). This will go a long way to save Faculty Members the cost of buying data to access Digital Information.

3. The university (through the ICT department) should install and run a functional and comprehensive Internet (both LAN and wireless) and university wide information system (staff quarters and student hostel inclusive that will cover all the campuses studied) to create an enabling environment for Internet and link the university to the seamless World Wide Web. The university should ensure that alternative sources of electricity are catered for so that issues surrounding access to digital information are resolved. With this, Faculty Members can have access to digital information irrespective of whether there is electricity or not. Qualified ICT specialists should be allocated to each faculty (the specialists should be known to all Faculty Members) to solve all issues relating to networking and its hardware- a fundamental problem influencing the utilization of the infrastructural facilities provided by the University management

4. The professionals in the central library should create more awareness on DLRS by employing proactive marketing strategies such as the use of newsletters, posters, flyers and brochure. Such promotion materials should be widely distributed in the Faculty Members offices and their pigeon holes and also publicized in all academic ceremonies such as: exhibitions, convocation, conferences, workshops and seminars. Also, the library should have the phone numbers and e-mail addresses of all Faculty Members in ABU. This can help in notifying them of the DLRS available through bulk SMS and e-mail messages because all the DLRS available in KIL are accessible through the library website. This should be done on regular basis. The DLRS on the library website should

be properly maintained and updated regularly as some of these services are just on the website, they are not functional. These can help in maximizing the usage of DLRS.

5. There should be a help desk known to all Faculty Members in the university community that will take care of all problems related to DLRS such as constant communication of what is available and how they can be effectively used. Librarians that will manage this help desk should be trained on customer relation.

6. The potential benefits (in terms of cost, convenience, satisfaction, social prestige e.t.c) of the DLRS over what is currently being used by the Faculty Member for teaching and research should be emphasized through proper marketing by the information professionals in charge in KIL using appropriate channel. Training in the use of DLRS should not be at the faculty level but at the departmental level as well. Trained librarians in the use of DLRS should be deployed to each department so that they can be in charge of training the Faculty Members in that department on a regular basis. This will take care of the inconveniences encountered by Faculty Members who are not resident on Samaru Campus and resolve the problems of changing codes and any other operational problem that may be encountered by a Faculty Member. With this approach, the trainers will be close to the trainees, relationship will be established due to familiarization and then benefit of using DLRS can be attained.

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APPENDICES

APPENDIX I: TABLES

Table 1: Description of Categories

RQs	SQs	s/no	Categories	Descriptions
1	1	1	On line communication technologies	Comments related to the digital information source and services faculty members use for everyday life
		2	Electronic commerce	
	2	3	Databases	Comments related to the digital information sources and services faculty members use for teaching and research
		4	DLRS	
2		5	Capital intensive technologies	Comments related to the Infrastructural technologies faculty members use to access digital information sources and services
		6	Less capital intensive technologies	
3		7	Ineffective infrastructural facilities	Comments on faculty members experience on the digital information sources and services provided by ABU to access digital information sources and services
		8	Improved Internet infrastructure	
		9	Limited computer access for faculty	
4		10	Aware of DLRS	Comments related to awareness of DLRS provided by ABU
		11	Unaware of DLRS	
5		12	Relative advantage	Comments related to the non use of DLRS by faculty members in ABU Zaria
		13	Trialability	
		14	Lack of communication	
		15	Hospitality	

Table 2: Illustrative quotes for each of the classification sub categories

S/NO	CLASSIFICATION S-CATs	Illustrative quotes
1.	E-mail	"Mostly I send mails because I am a research consultant, I deal with clients outside this environment and most of our transactions are on line. There are people I don't even see and I will start their work and finish it. We only communicate through either e- mail or text messages".
2.	Chatting	"Sometimes I use to chat but not quite often"
		"I chat occasionally"
3.	Facebook	" ……. I am not even the Facebook type even though I have a Facebook account, but it is a personal thing. I think those things distract me, so I don't bother about Facebook that much. That doesn't mean I don't access Facebook at all. Once I accidentally find myself there I look at one or two things and I move on".
4.	Online shopping	"I don't buy directly because it is risky and we are not up to that age yet in this country but I do transfer, pay school fees and other charges which are as good as shopping".
		"I buy a lot of books online especially on Amazon".
5.	E- payment	"I do transfer through the network (e-banking). I also pay school fees and other things like charges".
		"I do almost everything on line. Even my wash man I pay him online. Yah this morning today I made payment from my handset like may be 2 or 3 million pieces of payment let say that I'm highly digital not only academic"
6.	Generalized search tools	"I commonly use Google for my research and to prepare students' lecture".
		"My everyday life is about research and I do it on line through Google".
		"Well, Yes, I usually download journals for research and sometimes consult on line resources almost on daily basis for teaching via Google".
		"In terms of Academics, I commonly use Yahoo to prepare for my students' lecture, I use it for research purposes and also even to read. Also, If I want to know the latest information and so on and so forth"
7.	Academic search tools	"I'm highly digital. To be honest with you I even have cases where I deliver lecture online, while I was sick in Kano, I had the lecture with my student here in ABU, I make them to go digital in a way. Umm Yes and I have also done conferences abroad from, I mean I do a lot of work on line. I largely depend on my effort on Google scholar yes that's what I do".
		"I normally have access to the scholarly articles in SSRN, they have provision for certain materials for research and teaching".

		"…… sometimes I subscribe for (SSRN). I have forgotten the full meaning but I will remember in the course of the discussion. In SSRN, you will be given the current information though you have to subscribe. Once your subscription is off they will disconnect you, if you subscribe you will be getting current issues relevant or related to your area of specialization. For instance now, my background is accounting; my first degree, my second degree, even my third degree is in accounting. Definitely the information I am going to get have to be related to accounting (either public sector or private sector accounting) It has to relate to that environment. If I subscribe every current thing they will be sending it to my box, which I will access to build up my own information".
8.	On-line database	" When I was doing my PhD I used j stor"
		"sometimes I use HIANRY and science direct for my academic work".
9.	University LAN	"Depending on my location, in my office I usually accessed it through the university web site (ABU) that is through the university cable"
10.	Personal MODEM	"Well, I use my modem, I subscribe on monthly basis, three thousand naira, four thousand naira depending on the limit".
		"If I'm away from the office the connection is usually poor, so I use my MODEM".
11.	Personal router	"I say my solo efforts. I don't use the university facilities. No look at my router for the wireless and look at the university cable here can you see where I left it can you see my telephone that's my MODEM".
12.	Difficult to connect LAN	"We usually have challenges, we have cases where it will just go off and when we try to connect it becomes so difficult to connect and on very few occasion we get some of the technical people to come and fix it".
		"If I put the cable on it will take a life time for it to come on"
13.	LAN is not working	"LAN is a shadow of itself for some months now it has not been working so, nobody is even using it as far as this department is concerned"
		"I don't think the LAN works at all. I mean, if I put this cable on it will take a life time for it to come on that is if it ever come on. I don't use the university facilities and If I don't use it, it means it is useless because this is free (university) I m spending money there (pointed to his router) every month I spend nothing less than 10 thousand on Internet"
14.	Network problem when using LAN	"The network is very sluggish, sometimes when you fix the cable, it will not respond quickly"
		"the cable is not very effective because it goes off intermittently may be because of network problem"
15.	Power problem when using the cable	"My problem with LAN is that when there is no light I

		cannot work and at times throughout the day, it is not working". "The cables have not been very effective because once the light goes off I cannot use it". "We have electricity problem which does not make the cables work when it is mostly needed"
16.	The service is not extended to other part of the institution	" It is not only the school here that should have access to ABU infrastructural facilities, by now our homes in the quarters and student hostels should be wireless. 24/7 we should be accessing this system". "I think they have installed cables, fibre cable in almost all the office that are attached to the lecture halls, but in the other offices that are remote from the lecture halls, the cable do not extend there that is why when we were around that area especially when we are in the wards where we also do some part of teaching it may not be possible to access the Internet that is why we now had to resort to using personal Internet subscription"
17.	Wireless not effective	"Wireless comes intermittently so we monitor when we see signal, we click and in the process of accessing it can just go off"
18.	No access to wireless connection	"We use to have access to wireless connection in the past, but not so for now" "We don't have this access to use the university wireless, it was an extra effort by the department so they have to buy one gadget, router and what have you. So, now you can be able to get access to it. If you are here and there is light you see some students browsing with their phones."
19.	ABU internet infrastructural facilities has improved	"Before now it was not really smooth compared to the MTN that I used, but recently there is improvement with regards to ABU Internet facilities" "Yes! Eh! ABU has provided this fibre optics that are in the offices initially they were trying to make us go wireless but was not very effective but with this cable connections using the fibre optics at least the service of this digital going has improved"
20.	No provision of computers to staffs	……the only thing is there are certain challenges like there is no support like laptop and others, even desktop you have to buy it yourself".
21.	I am aware of online databases	"Yes I'm aware of one, which I forget the name that they give us these thing… Ok, this one DOAJ, Ok but the one I am familiar with are online database DOAJ, DOAB and then AJOL"
22.	I am aware of MTN e- library	"I only attended workshop there in the MTN E library that is how I got to know about it, and I know that they have Digitalized skill, it contains everything, it contain books". "I have never access the MTN e-library, I only heard of it, the modality, the manner, the approach at which I can access it I don't know"
23.	I am aware of Institutional	"Institutional repository, Yeah, I heard of it but I don't

	Repositories	know how it works. I think there was a time they circulate a circular in institution…..but I don't remember"
24.	I am aware of offline databases	"I know in KIL they have this, is it CD- ROM search unit, I don't know, yeah! But even that I only went there once, although as a student"
25.	I am not aware of any DLRS	"I don't know what they have. Sometimes I don't go to the library for the whole semester"
		"Zero. I went to make an effort and it was fruitless so how can I be aware of what they have"
26.	Power constraint	"Another problem here is, you know this power issue, if there is no power you cannot browse. You can always use a text book without light".
27.	I can always get what I need from other sources	"All what I need get them online provided they are uploaded to the Internet. I don't even go there (to the library). I have all what I need; I see no need going there".
		"If I can get what I want from our own source here in the department, we are up to date here, modern books, apart from modern books we have our own browser why do I need to go to the library for DLRS".
		"It all depends on the need and if the need arises. Since there are other sources, like print materials that I can easily lay my hands on"
28.	Accessibility problem	"What I know about the KIL is while I was doing my Phd, at that time I looked around I don't have access to digital library facility and I was directed to kennedy library. I went there, there was a particular room where an officer will be there to help us, link us to the website where we could get the materials and then all we did was to download whatever we needed and they print it for us I think that was the kind of access that was of help to me. I do not have direct access. It is not convenient for me as each time I have to be going to the library; meanwhile there are some resources that can equally help especially on-line without going to the library either through Google or whatever".
		"The idea of how to access it is the main reason for not using the DLRS, it is just now that you are telling me that I can be here and access it. Nobody came to educate us as to how we can sit down here and have access to it unlike Google that you don't need any one to put you through".
		"It is not that I don't want to use it. I want to use them. It is because I have limited access to availability. I told you about this server thing. So I don't know and I cannot be buying 3000 naira internet access, because I can even use it in a day or two, it depends on what you are going to download. If I'm using the cable provided by the campus, I can use it 24/7 because in my leisure time I can download as many as I want to but since I'm using my MODEM I can't do that, I will just open my mail and see if there is something new that I have to respond to, if there is a journal I wanted to access, or an article I'm writing and so on I will just go there direct and browse and so that I would not

		exhaust my data… one has to be very conscious. I am constrained by the accessibility of it. It came with a cost and a heavy cost for that matter especially if the cable is not working, but if it is working, my dear somebody can even stay in the office for a long time and not even know".
29.	DLRS is not close to us	"The facility is not close to us. Sometimes it might be a whole month, nothing to do in Samaru, how will I go there? You understand? Besides, it is what you know that exist and you have idea of how it works that you will try to see. If we have it in the kennedy library here it is very close to us and very easy, except now that you are telling me I can be here and I can be accessing that one in Samaru".
		"Samaru is far, you know going to Samaru when you have a lot of work here. It is not easy. Especially when you have to go because of this CODE. You know you have to get the CODE from KIL. I think that is my major problem. If you eventually succeed in getting the CODE, before you know it they have changed it, so you have to keep checking over and over again. So this changing of CODE, when you now want to use it, it became an issue and you became fed up"
30.	Bad network	"If you have the Internet connection always available via the cable or wireless, you can be able to browse and get the information 24/7 but reverse is the case with ABU Internet facilities especially here in Kongo campus".
		"Sometimes there will be no network for two day, we don't know, we feel the trees here block communication, will I not work because there is no network? After all I was doing research and teaching before all these internet came so I make do with other sources that will not require network and power"
31.	Convenience (time)	"No, because of time constraint you have the next class to attend, you have defense to attend, and students are waiting for you all those things have reduced your time. If you can get what you want without going to the library, to me other ones are regarded as time wasting, ……... You see me now, see what I am doing, I am marking MIAD, and why am fast on it is that more are coming and I don't want to get confused".
		"No! It is the time constraint actually yes! and convenience because I had to go to the Library. I can easily get other stuffs to use here at my convenience without going to the library".
		"As academic staff we would be busy for instance I have classes everyday Monday – Friday at all levels. And after my class when I am suppose to take a rest, then I will start going to Samaru, it is something that is not easy, there is no time to try it out"
32.	Colleagues from abroad assist me to get materials I need for my research	"Yes, I have tried to use it (I – okay) because I remember I think I even use that science direct, but I find it easier to liaise with colleagues, in other foreign universities that have free access. I will just give them the area and

		request them to send me material on what I need and they will send them from various libraries abroad and I will just use it for my research. So that one also makes me not to bother much about the challenges around".
		"Sometimes our colleagues that travel outside give us privilege information. Somebody gave me one website and I was able to download textbooks from there, but I have never tried these services in ABU Zaria except the one I told you about when I was doing my PhD. Also, when I was conducting my research, there was one book I saw is around $150. My colleague gave me some website, and also his access code to the University library I was able to download it free"
33.	Nobody informed us on how it works	"Maybe I would have tried it if somebody had come to educate me as to how I can sit down here and have access to it or how to use it generally unlike Google that you don't need any one to put through".
		"I don't use it often. Sometimes it is just a communication gap, there are certain things, maybe, if you want information, you get it close to you, if I don't know there should be somebody to explain to me how to use it, so that I will try it and subsequently, get to use it."
34.	Nobody informed us of DLRS existence in the library	"There are so many things that I don't know pertaining the issue of this library services. It is just now I am getting to know so many things, I am so surprise, I was looking for information maybe immediately when I come tomorrow, I will go and search in the library. Like I said it already, "lack of information", lack of awareness. That is the fact. If I have something at my doorstep why should I move somewhere else? Why should I buy textbooks?"
		"Well! Firstly I will say there is no information passed to staff about the existence of DLRS in the library. It is lack of awareness; to me most people don't know of its existence. They are not even aware there are such materials in the school so the awareness was not created among staffs"
35.	I was not well attended to in the library	"There was a time I wanted to download some books I wanted to get from Jstor link and they kept on referring me to the university library, that's why I went to the university library and nobody attended to me. When I got someone willing to talk to me, he doesn't know what I was asking for and couldn't direct me to the appropriate section where I can get it. Since then I stopped going there"
		"The attitude of librarian here put me off, I once went to the library to inquire about one of the DLRS- JstoR to be precise, the reception I got was so cold that I vowed not to go there again. It is now I am getting to know they have it in KIL (probably the person I met doesn't know about it). I am doing my PhD in the university of Ibadan and once you enter their library, they make you feel at home and provide you with all the necessary materials you want".

APPENDIX II: FIGURES

Figure 1: Data analysis step by category and sub category

Figure 1.1: Experiences of Faculty Members in ABU on the use of DISS

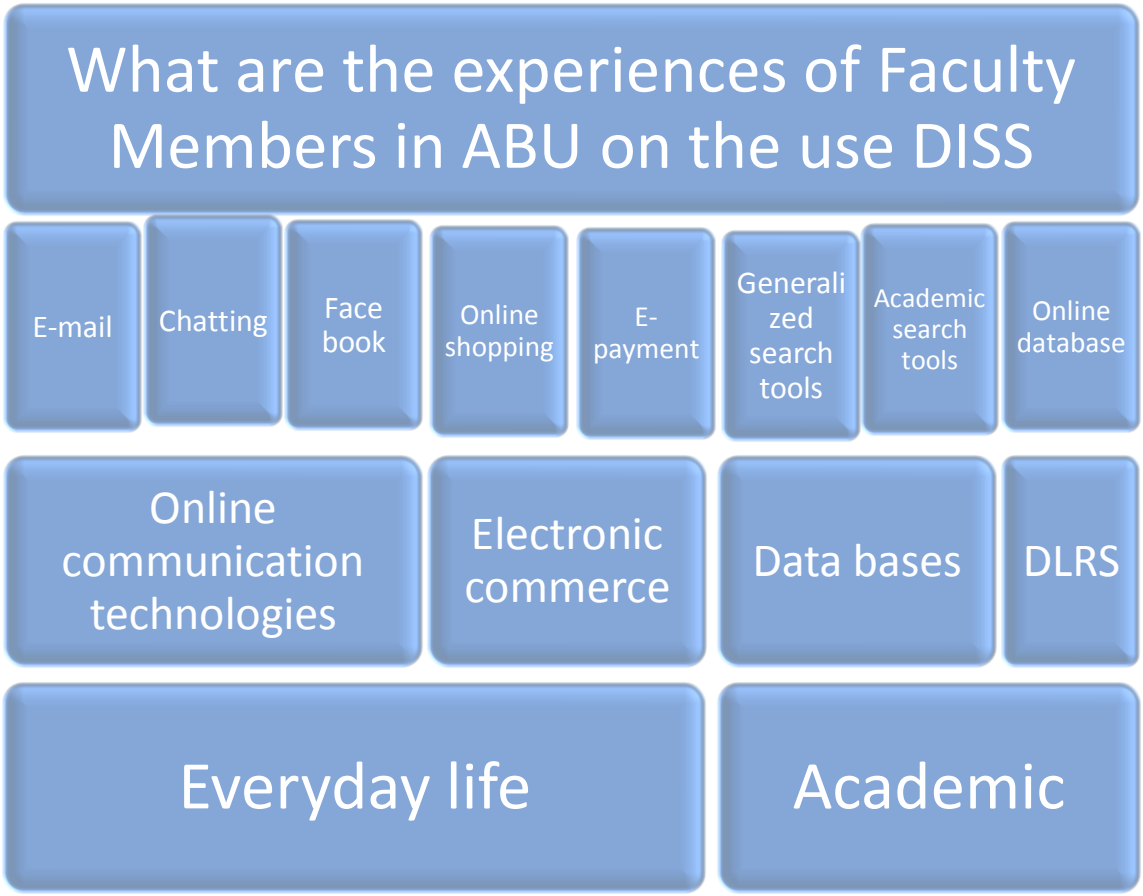


Figure 1.2: Infrastructural facilities use to access DISS

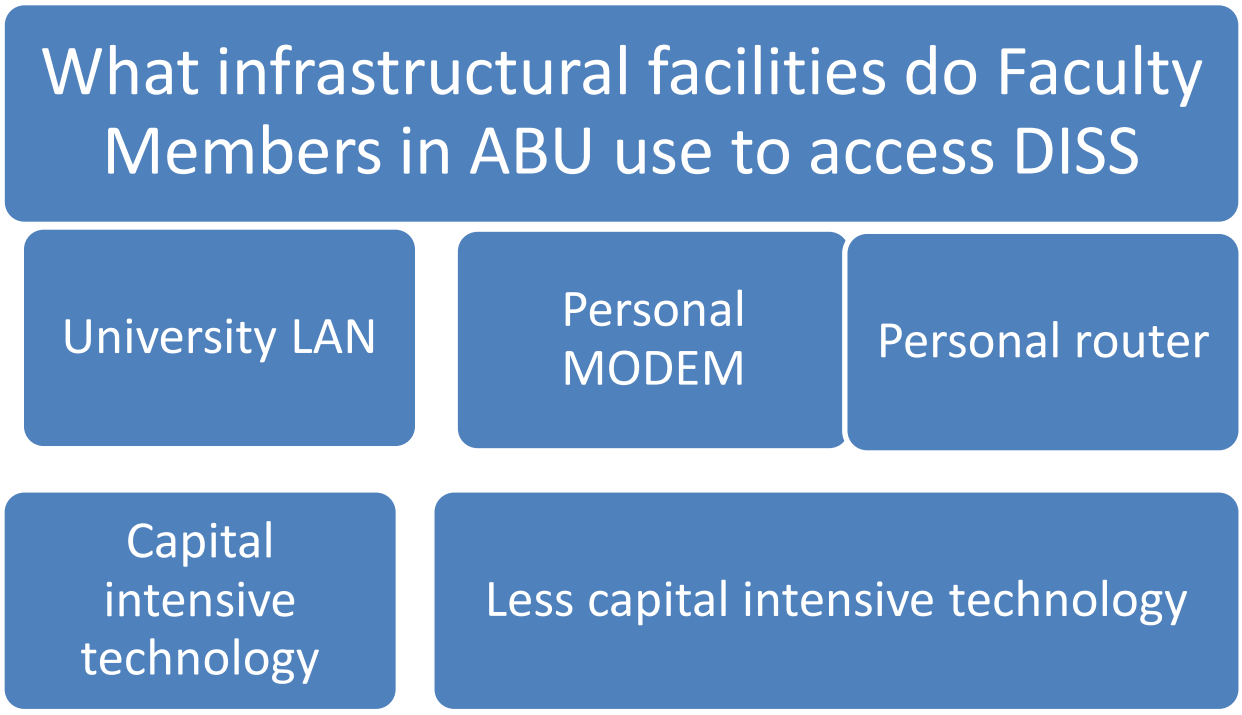


Figure 1.3: Experiences of Faculty Members on the infrastructural facilities provided by ABU to access DISS

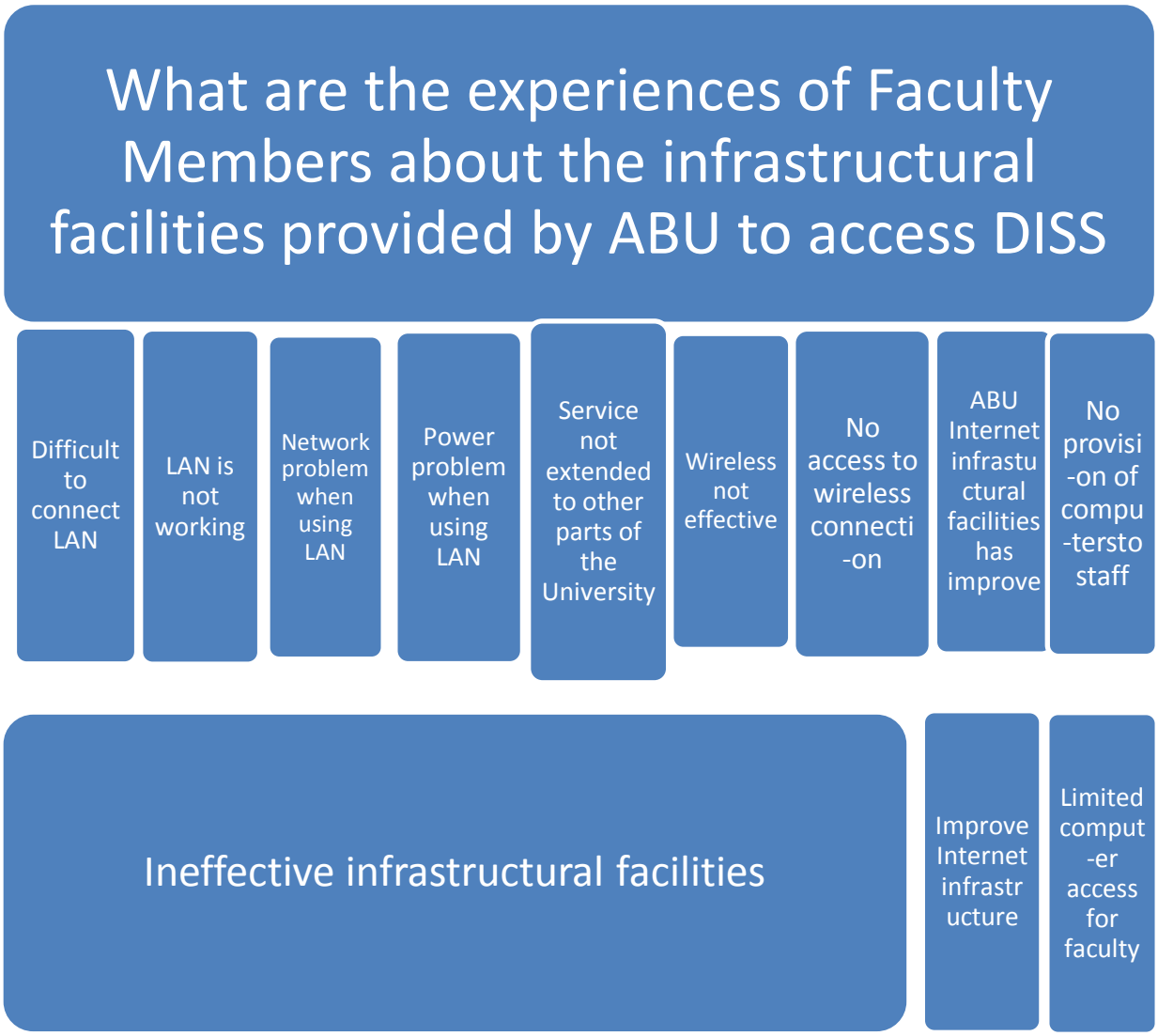


Figure 1.4: Awareness of DLRS by Faculty Members in ABU

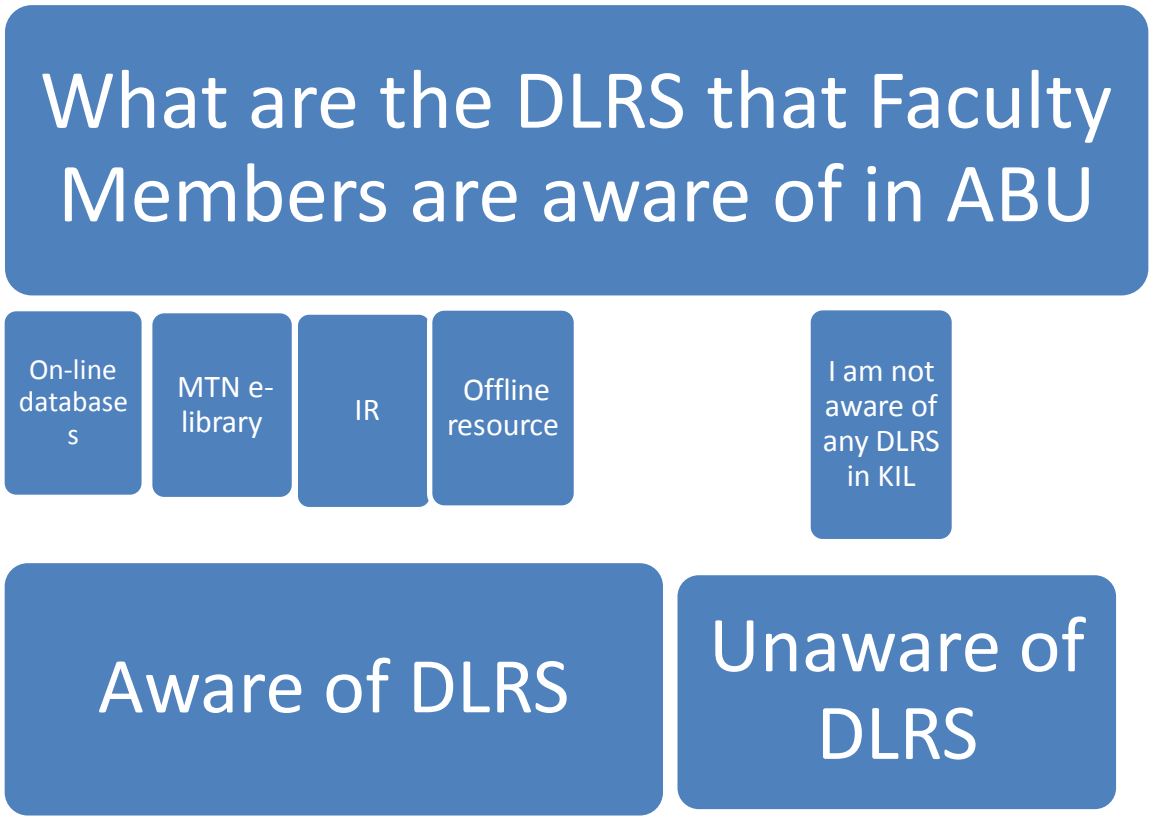


Figure 1.5: Reasons for nonuse of DLRS by Faculty Members in ABU

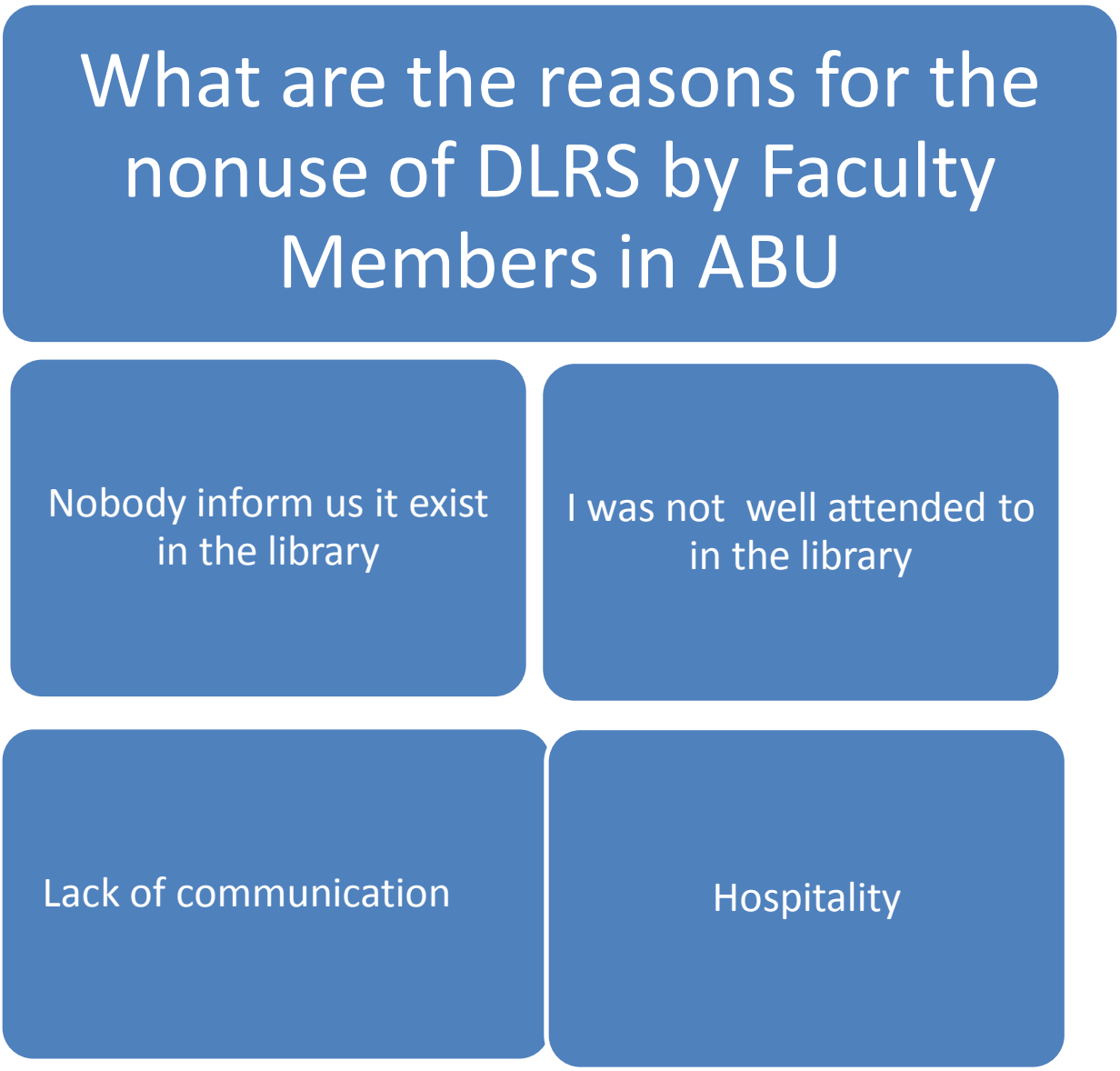


Figure1.6: PAIT explaining the experiences of Faculty Members in ABU on the nonuse of DLRS

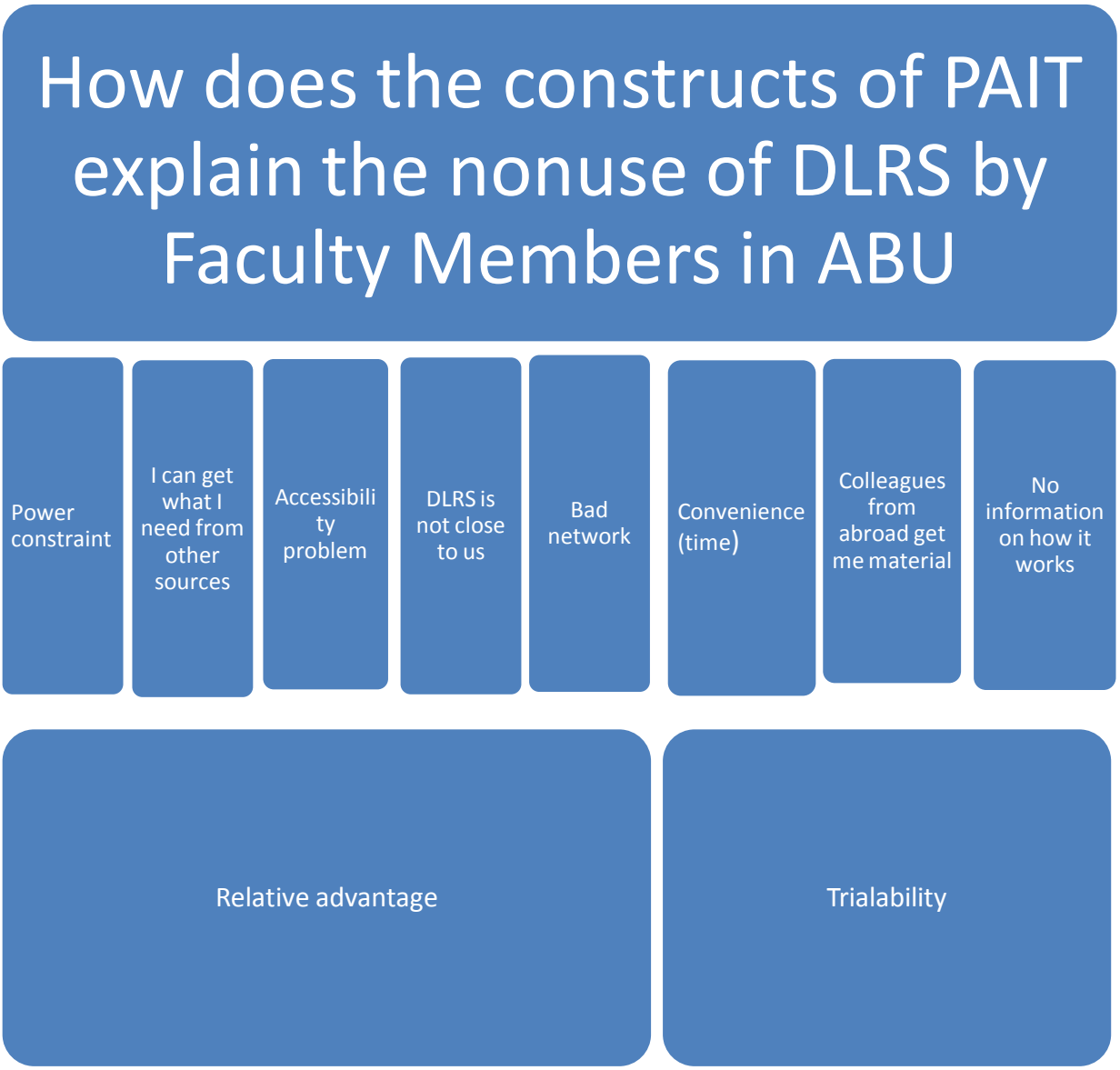


Figure 2: Data analysis step by number of open codes, sub categories and categories

Figure 2.1: Experiences of Faculty Members in ABU on the use of DISS

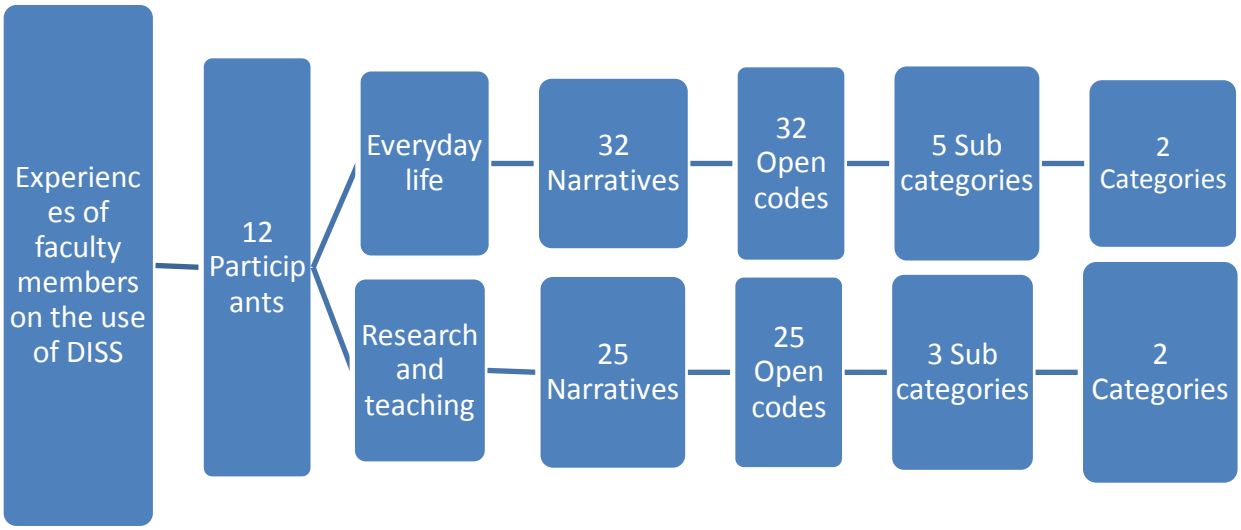


Figure 2.2: Infrastructural facilities use to access DISS

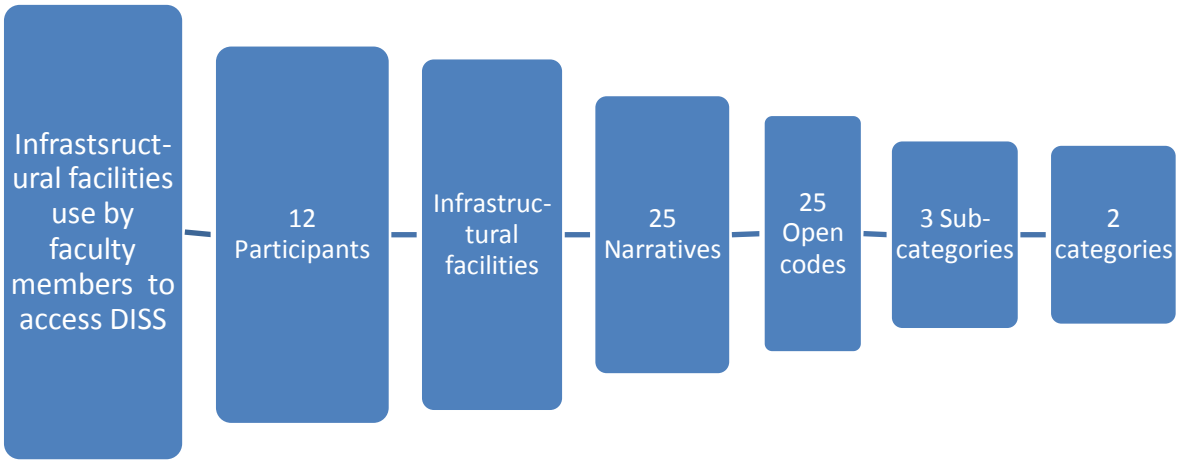


Figure 2.3: Experiences of Faculty Members on the infrastructural facilities provided by ABU to access DISS

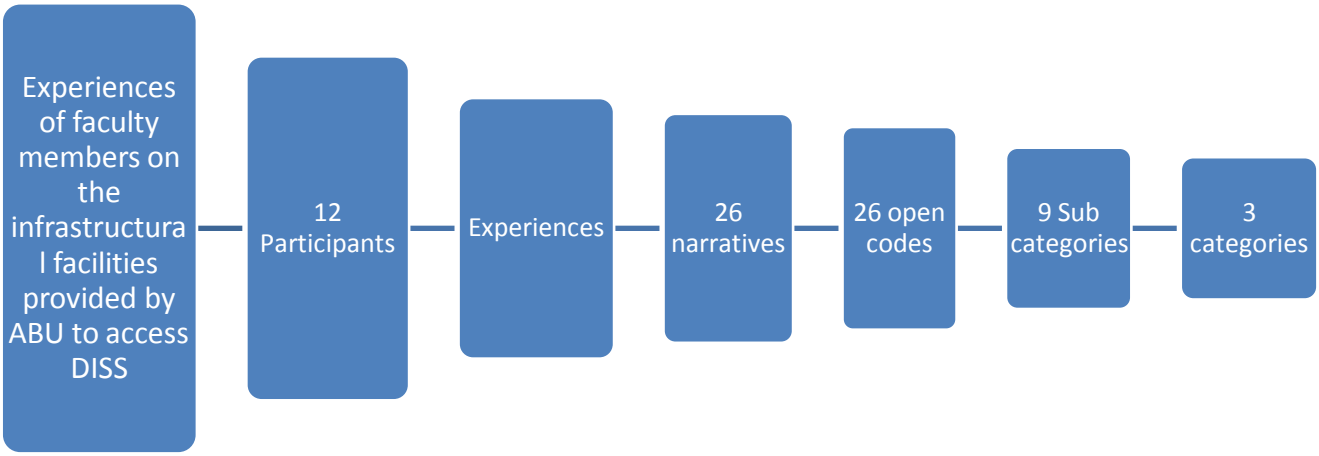


Figure 2.4: DLRS Faculty Members are aware of in ABU

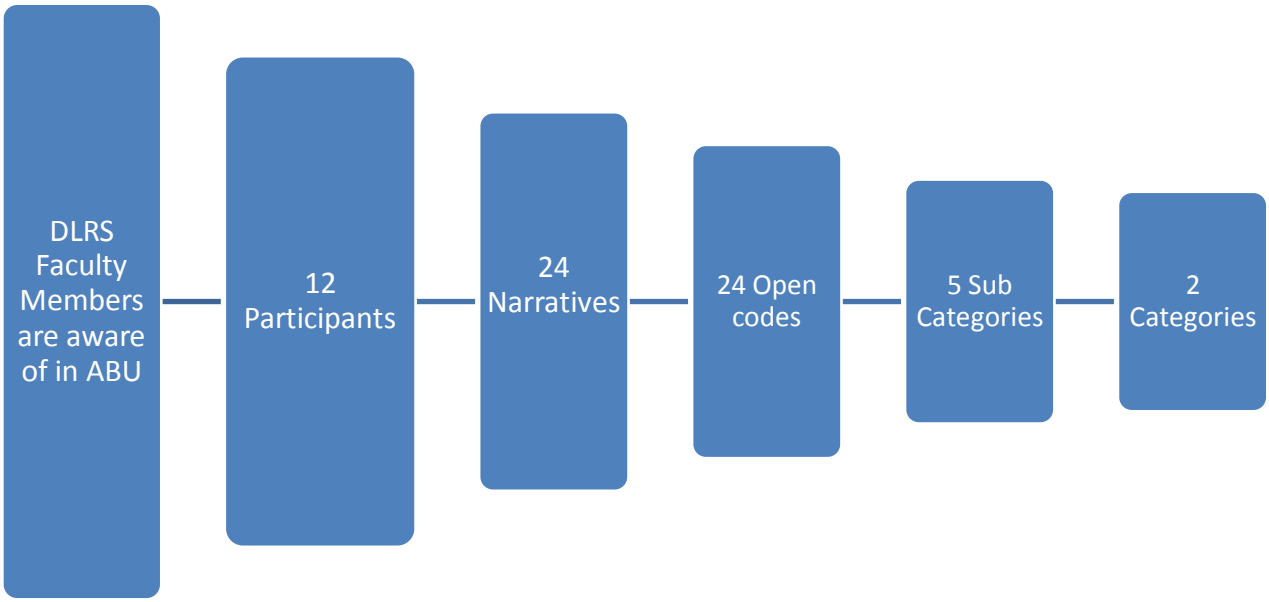


Figure 2.5: Reasons why Faculty Members in ABU do not use DLRS

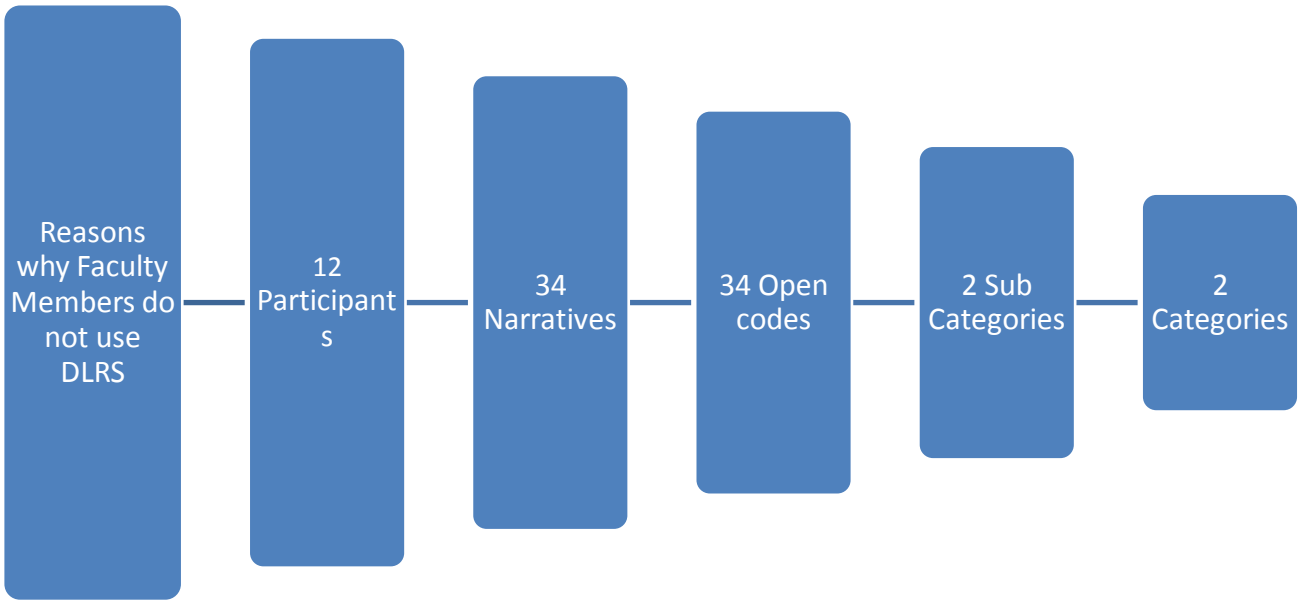


Figure 2.6: PAIT explaining the experiences of Faculty Members in ABU on the nonuse of DLRS

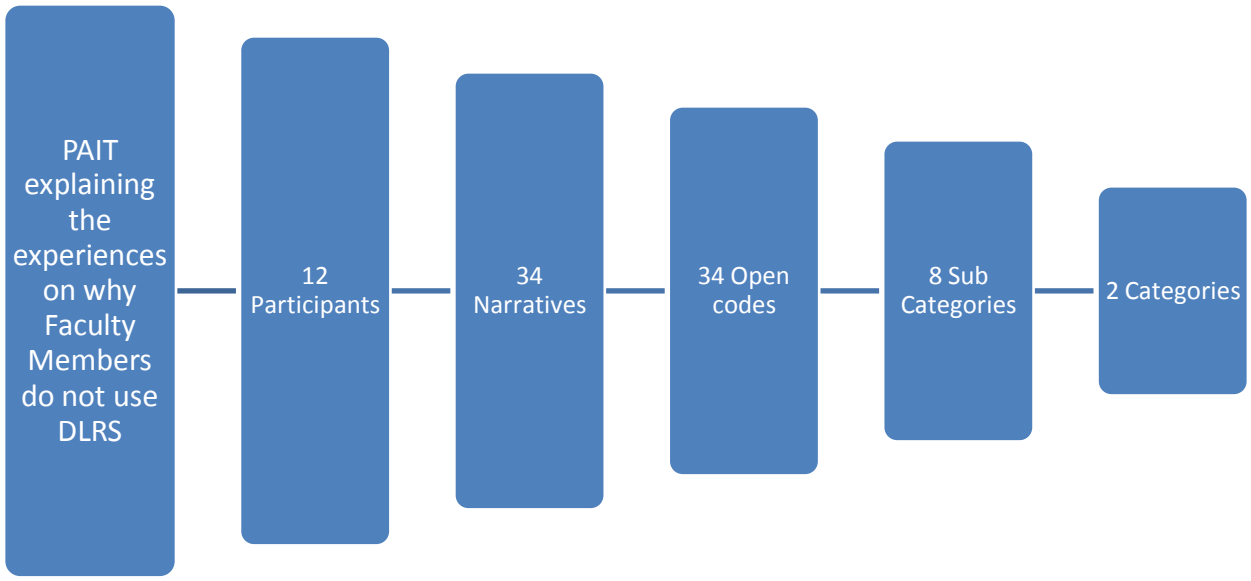
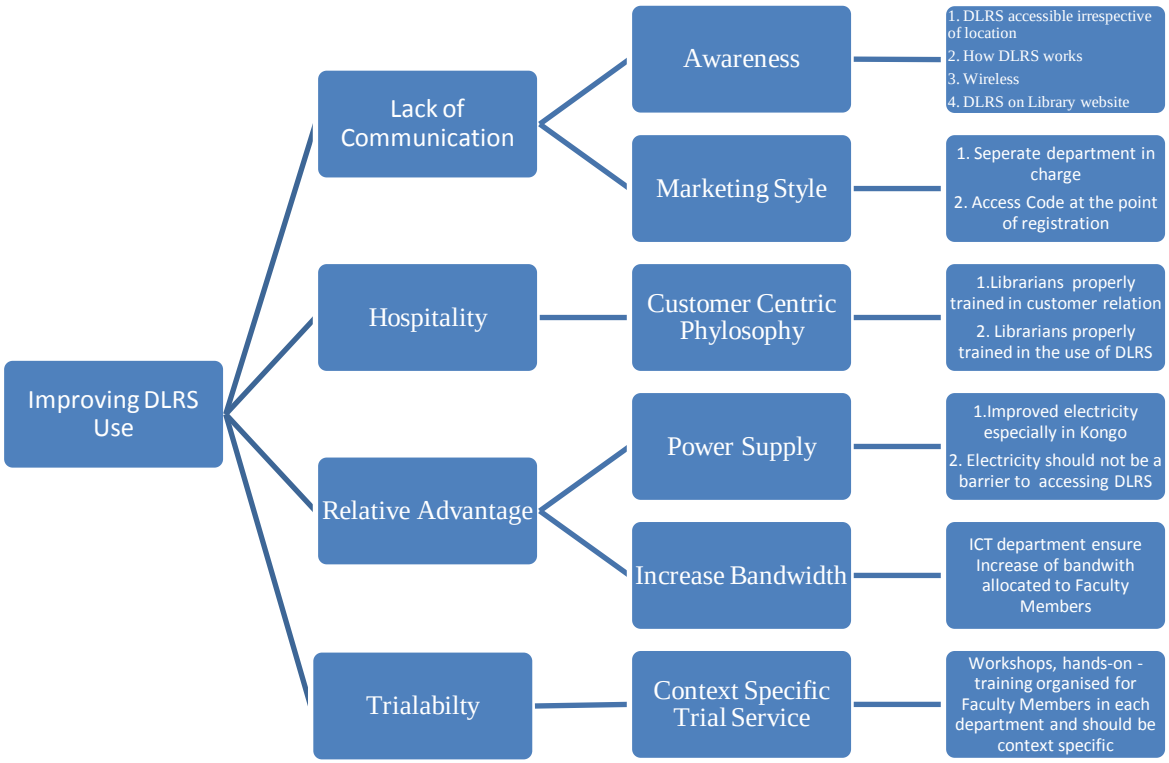


Figure 3: Conceptual Framework for Improving the Use of DLRS in ABU, Zaria



APPENDIX III: Interview Guide

Interview Guide for Participants at a research on "Understanding the Marginal use and Absolute Nonuse of Digital Library Resources and Services by faculty members in ABU"

Department of Library and Information Science
Ahmadu Bello University Zaria
27th October, 2015

I am a postgraduate student in Library and Information Science department, Ahmadu Bello University Zaria undergoing a Ph.D programme. I would like to talk to you as part of my thesis investigating the Nonuse of Digital Library Resources and Services (DLRS) by faculty members in ABU.

By Digital Library Resources and Services, I mean resources and services that are provided by the library. They are in electronic form which users can access locally or remotely through computer networks. The importance of DLRS is that it provides quick access to rich up-to-date information resources that is suitable for teaching and research. The information in it can be copied for preservation without error, stored compactly, and searched very quickly.

The estimated duration of time is forty five minutes (45mins). Confidentiality is ensured as all the data and information gathered will be kept in confidence. All responses will be recorded on a tape.

a. In what department are you?
b. Could you please tell me what your rank is?
c. How long have you been teaching in A.B.U?

1. Can you share with me your experience about the digital information sources and services that you use?
   i. everyday life?
   ii. Academics (teaching, research)

2. How do you access digital information sources and services for?
   i. Teaching and
   ii. Research
   (By access I mean the infrastructural facilities that allow you get the right to use the digital information sources and services (personal effort or institutional support)

3. Tell me about the infrastructural support provided by ABU to access digital information sources and services?

DIGITAL LIBRARY RESOURCES AND SERVICES IN KASHIM IBRAHIM LIBRARY

4. Can you tell me about DLRS that you are aware of provided by KIL for:
   i. Teaching and
   ii. Research
5. Share with me your experiences on why you do not use the DLRS provided by KIL

6. Probing Questions with the constructs of Perceived Attribute of Innovation Theory (PAIT)

Construct 1: Relative Advantage
How do faculty members in ABU perceive DLRS in terms of advantages?

1. Can you discuss the advantages of DLRS?
   Probe 1
   Can you describe your experiences about the advantages?

Construct 2: Compatibility
How compatible is DLRS with faculty members existing values and norms?

1. How do you feel about DLRS in respect to how well it matched with your own lifestyle and personal philosophy?
   Probe 1
   Please describe your experience
2. Does DLRS fit into your teaching and research philosophy?
   Probe 1
   If yes, tell me about your experience
   If no, describe why based on your experience
3. Do you think your teaching and research style will change in some ways if you use DLRS? If yes, how?
   If no, why do you think so?

Construct 3: Complexity
How do faculty members in ABU perceive DLRS in terms of complexity?

1. How can you describe DLRS in terms of difficulty or ease of use?

Probe 1

Can you tell me about your experiences about the difficulty or ease you encounter with DLRS?

Construct 4: Trialability
How do faculty members perceive DLRS in terms of Trialability?

1. Did you experiment with DLRS on a limited basis or long enough to see what it could do? Probe 1

If so, tell me about your experience?
Probe 2
Where did you try it?

2. Does DLRS require a lot of training and practice?
   Probe 1
   Tell me about your personal experience.

Construct 5: Observability

How do faculty members perceive DLRS in terms of visibility of its result?

1. Were you able to observe the effective use of DLRS by your colleagues in ABU and other Institutions?

Probe 1

Can you tell me about some of their views regarding it?

Probe 2

Tell me about your experience

APPENDIX IV: CONSENT FORM

Department of Library and Information Science
Ahmadu Bello University Zaria
22nd September, 2015

INFORMATION CONSENT FOR PARTICIPATION IN THE STUDY

I am Mrs Monsurat Mohammed, a Ph.D student in the department of Library and Information Science Ahmadu Bello University Zaria carrying out a study titled "Understanding Marginal Use and Absolute Nonuse of Digital Library Resources and Services by Faculty Members in Ahmadu Bello University Zaria, Nigeria". I will like to invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

Purpose of the research

The university management have invested huge sum of money in providing Digital Library Resources and Service (DLRS) so that staff and students can have access to it irrespective of their location. By DLRS, I mean services that are provided by the library. They are in electronic form which users can access locally or remotely through computer networks. The importance of DLRS is that it provides quick access to rich up-to-date information resources that is suitable for teaching and research. The information in it can be copied for preservation without error, stored compactly, and searched very quickly. Despite the importance of DLRS and the huge sum of money invested in DLRS, the researcher observed from preliminary investigations that nonuse of DLRS among the Faculty Members still exist.

Ownership and Dissemination of Result

The dissertation is in partial fulfillment of the requirement for the award of Doctor of Philosophy, Library Science, Ahmadu Bello University Zaria. The result will be made known to you if you wish to know the result at the end of the study. There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them from me.

Your participation in this study is entirely voluntary. It is your choice whether to participate or not. Your responses will be recorded on tape. Confidentiality will be ensured as all the data and information gathered will be kept in confidence.

Duration

The duration of the interview will be between forty five (45) minutes and one (1) hour. There may be follow up interview if in any case there is need for clarification.

Statement of Confidentiality

I hereby undertake in writing the participants confidentiality throughout the course of this study and after.

Signature ……..... Date…….....

Mrs M.F Mohammed
Dept of Library and Information Science
Ahmadu Bello University
Zaria
GSM NO: 08077873345

APPENDIX V: ASSENT FORM

FACULTY OF MEDICINE PARTICIPANTS

This is to certify that I willingly agreed to participate as an interviewee in this study titled "Understanding Marginal Use and Absolute Nonuse of Digital Library Resources and Services by Faculty Members in Ahmadu Bello University Zaria, Nigeria". The details of the research and its implication have been explained to me by the researcher Mrs Monsurat Mohammed. I will make myself available in case there may be any follow up interview.

If you sign this paper, it means that you have read this and that you want to be part of the study.

AGGREEMENT

I have decided to be a participant in this study though I know I don't have to do it.

Name of Participant…….

Faculty…….

Department …….

Signature…….. Date…….

GSM NO…….