UTILIZATION OF PRINT AND ELECTRONIC INFORMATION RESOURCES AND SERVICES BY UNDERGRADUATE STUDENTS OF UNIVERSITY LIBRARIES IN NIGER STATE

BY

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DECLARATION

I hereby declare that this thesis titled "**Utilization of Print and Electronic Information Resources and Services by Undergraduate Students of University Libraries in Niger State**" has been written by me and it is a record of my research work. No part of this work has been presented in any previous application for another degree or diploma at any institution. All borrowed ideas have been dully acknowledged in the text and a list of references provided.

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CERTIFICATION

This thesis entitled "**Utilization of Print and Electronic Information Resources and Services by Undergraduate Students of University Libraries in Niger State**" by Yakubu Aronzhe MOHAMMED meets the regulations governing the award of degree of Master of Library Science (MLS) of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to my parents whose love, support, blessings and prayers I have always found immensely beneficial. My fervent prayer goes to my late father, who passed on after a protracted illness on 24th June 2013. Oh Allah! Let his gentle soul rest in perfect peace. Amin.

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ABSTRACT

This research work on "**Utilization of Print and Electronic Information Resources and Services by Undergraduate Students of University Libraries in Niger State"** was conducted to find out the available print and electronic information resources and services and their utilization by undergraduate students in university libraries in Niger State; Federal University of Technology (FUT), Minna and Ibrahim Badamasi Babangida University (IBBU), Lapai. The 200 level, 300 level and 400 level students of 2012/2013 session of the two universities constituted the population of the study. The total population of the undergraduate students of the two universities was 16, 455 and one percent of this population was sampled for the study. Questionnaire was used as instrument for data collection. The questionnaire were administered to the 165 undergraduate students out of which number, 126 (76.36%) duly completed and returned their copies which were used for analysis. The researcher used survey research method and closed questionnaire was designed and used for data collection. Descriptive statistical technique was used to analyze the data while tables and figures were used to aid clarity and understanding. The finding shows that majority of information resources in the university libraries were printed materials. This was indicated by high responses recorded for printed information resources such as textbooks (100%), encyclopedia (94.44%), Journals and newspapers (92.86%) each. The finding also revealed that printed information materials were highly patronized by undergraduate students. Computer related services such as Internet access, down loading, e-Books and printing were also rated high. The finding also shows that undergraduate students were satisfied with some of the print information services such as book borrowing, public access catalogue and bindery services. Some of the factors that influenced the choice of information resource type included fastness and currency and content of the information resource. The purpose of using information resources included assignment (100%), examinations (77.78%) and research (65.87%). It was also found out that undergraduate students faced challenges in using both print and electronic information resources and services. These include lack of awareness of information resources, obsolete books and relevant books. Other challenges included unstable Internet connectivity, lack of awareness of available resources, very slow network and constant power failure. Suggestions were offered on how to generally improve information resources. Finally, some recommendations were made to overcome the challenges, to provide print and value added electronic information resources for undergraduate students use.

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LIST OF ABBREVIATIONS

ACRL – Academic College and Research Libraries

CD-ROM – Compact Disc Read Only Memory

DVD – Digital Visual Display

ECAR – EDUCAUSE Center for Applied Research

FUTM –Federal University of Technology Minna

IBBUL – Ibrahim Badamasi Babangida University Lapai

ICT – Information and Communication Technology

ISP –Internet Services Provider

JISC – Joint Information System Committee

MIT - Massachusetts Institute of Technology

NCCE –National Commission for Colleges of Education

NetGen – Network Generation

n.d.- No date

OCLC- Online Computer Library Center

OPAC- Online Public Access Catalogue

PDA- Personal Digital Assistant

SDI- Selective Dissemination of Information

SAAT- School of Agriculture and Agricultural Technology

SET- School of Engineering Technology

SEET- School of Engineering and Engineering Technology

SEMT- School of Environmental and Management Technology

SICT- School of Information and Communication Technology

SNAS – School of Natural and Applied Sciences

STE – School of Technology Education

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

There are different types of libraries and their aims and objectives are determined by the organization they are established to serve. The concept of librarianship is based on provision of relevant, accurate and timely information services for the purpose of utilization by the clientele to achieve the objectives of their institutions. University libraries (academic libraries) are established in academic institutions to provide information resources and services to meet the information needs of the clientele (staff and students). Libraries established to provide information resources and services to support teaching, learning and research in academic institutions such as universities, polytechnics, colleges of education and other similar institutions are referred to as academic libraries. Abubakar (2011) opined that academic libraries are at the forefront of providing information services to their respective communities which comprise of students, lecturers, and researchers to support teaching, learning and research.

To further give credence to the importance of libraries to academics, Weiner (2005) asserted that responsiveness to students and faculty needs, quality of service, and resilience is the hallmark of academic libraries. It is the core mandate of university libraries to acquire information resources (print and electronic) to provide information services to aid teaching and learning of undergraduate students. The undergraduate students constitute the largest set of university library users and they require different types of information resources (print and electronic) from university libraries to meet their information needs in all the programmes

offered in the university. The undergraduate students rely mainly on university libraries to provide these information sources.

The predominant physical format of information resources were print such as books, journals, magazines, newspapers, pamphlets and they were the primary means of providing information services in university libraries. The development in Information and Communication Technologies (ICTs) brought about the emergence of electronic information resources and services in libraries such as Internet services, databases, Compact Disc Read Only Memory (CD-ROM), online catalogue and web resources. There is a paradigm shift in information resource and services in libraries with the advent of ICTs. Abubakar (2011) noted that the global trend is characterized by a fundamental shift from traditional information environment to an e-environment where emphasis is placed more on acquisition of e-resources such as e-books, e-journals as well as on-line databases.

The Association of College and Research Libraries (ACRL) Research and Planning Committee (2010), a body responsible for environmental scanning, updating and identifying trends in academic libraries in its 2010 top ten trends in academic libraries opined that academic library collection growth will be driven by patron demand and will include new resources. The report further stated that 'explosive growth of mobile devices and applications will drive new services' adding that 'the definition of the library will change as physical space is repurposed and virtual space expanded.' The development of e-resources posed some challenges to university library's ability to provide information resources and services for undergraduate students and other categories of its clientele. At the time that printed information resources were the only or main sources of information and services, librarians selected, acquired, processed, stored and organized these information (print) resources for

patrons to utilize. The electronic resources, development, organization and services have radically deviated from the traditional approach used for print resources, such as acquisition, organization, processing, storage, accessing and services. Wan Dallah and Singh (2005) observed that librarians faced various challenges in the digital environment, which included building the resources, sustaining the resources, and library staff training to fulfill the need of the users in the information age. Access to information is very important in modern world and lack of it leads to some kind of disadvantage or information poverty. According to Fahey (2003), those that cannot access electronic information will experience electronic information poverty (EIP). In this regard, undergraduate students that depended on university libraries to provide information resources to support their study and learning will face challenges of access and use of information resources and services. This will impact negatively on their studies and programmes.

This research focused on Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai libraries. Federal University of Technology Minna was established in 1983 by the Federal Government of Nigeria while Badamasi Babangida University Lapai (IBBUL) was founded by Niger State Government in 2005. Federal University of Technology Minna operates two libraries; Muhammad Awwal Ibrahim Library in Bosso Campus while and Ibrahim Badamasi Babangida Library is located at Gidan Kwanu Campus. Ibrahim Badamasi Babangida University Lapai is located in Lapai and operates in one campus only. The name of library is Abubakar Gimba Library.

University libraries in Nigeria face various challenges most of which border on poor funding. The availability of regular and adequate funds is essential for libraries to operate and to perform its mandatory role in terms of provision of information resources and services to its

parent institution. It becomes difficult for university libraries to provide adequate and current information (print and electronic) resources and services to undergraduate students when funds are not available. A report on Nigerian academic libraries by Ifijeh (2011) observed that 'facilities and information resources are inadequate and students use the libraries mainly for study space.' This was also corroborated by Daniel (2002) that 'poor quality library resource, had depressed quality of teaching, learning and research' in academic institutions in Nigeria.

However, in another research, Gbaje (2007) indicated that Nigerian Communications Commission's regulatory efforts have led to increased competition and availability of voice, data and Internet applications services. This increase was expected to motivate or serves as impetus for university libraries to improve their information resources and services access through the provision of e-resources to complement print information resources and services. Electronic information resources had become important sources of information in academic institutions around the world. The acquisition and deployment of information resources and services by the university libraries for undergraduate students' utilization is imperative because academic institutions in Nigeria are part of the global community of academics. This need and aspiration was realized some decades ago and attempts were made by individual academic libraries to deploy ICT facilities and advocacies were reported in literature such as Fatoki (2005), Ani et al (2005), Etim (2006), and Womboh and Abba (2008) to improve access and utilization of information resources in academic libraries in Nigeria. Okebukola (2002) believed that access to virtual libraries would improve the quality of teaching and research in higher institutions through the provision of current e-books, e-journals and other library resources.

In a related discourse, Ya'u (2003) observed that virtual library would provide the opportunity to address the paucity of teaching and research materials in the libraries of higher institutions in Nigeria and opportunity for sharing of research outputs with the global community amongst the institutions and the local researchers. It is important to find out the information resources and services that university libraries provide for undergraduate students who constitute a very large segment of its patrons against the background of the poor state academic libraries described above. This study was conducted to find out the print and electronic information resources and services provided or available in university libraries in Niger State for undergraduate students programmes.

1.2 Statement of the Problem

The dearth of information resources and services in academic institutions (universities) in Nigeria had been reported by many researchers. For example, a report by Ifijeh (2011) on university libraries found that 'information resources are inadequate and students used the libraries mainly for study spaces.' In another study, Daniel (2002) lamented on library services in educational institutions; according to him 'poor quality library resource had depressed quality of teaching, learning and research.' These indicate that Nigerian university libraries do not have adequate library information resources and facilities in place for undergraduate students that constituted the largest group of academic library users. In another study, Ehikhamenor (2003) cited in Oladejo and Adelua (2012) reported that 77.5% of Nigerian students rated electronic journals as 'important' or 'very important' based on expected, rather than actual use. However, considering the time lag, electronic information resources infrastructure is more available and accessible now to Nigerian students (Azubogu and Madu, 2007) and the fact that Nigerian universities have continued to graduate students every year; it

is expedient to find out information resources and services provided by university libraries for undergraduate students use. It is the statutory responsibility of university libraries to provide information resources and services (print and electronic) such as books, journals, web resources, databases, CD-ROM for undergraduate students use. Access to print and electronic information resources and services are essential for undergraduate students' programmes in the universities. This study focused on assessment of utilization of information resources and services provided by university libraries to facilitate undergraduate students' studies. In the light of this, the researcher specifically intended to find out print and electronic information resources and services provided by university libraries for undergraduate students use in Niger State.

1.3 Research Questions

This study seeks to provide answers to the following questions:

1. What print and electronic information resources are provided by university libraries for undergraduate students use in Niger State?
2. What print and electronic information services are provided in university libraries for undergraduate students in Niger State?
3. What is the level of satisfaction with print and electronic information resources and services provided by university libraries for undergraduate students use in Niger State?
4. What are the challenges faced by undergraduate students in using print and electronic information resources and services in university libraries in Niger State?

1.4 Objectives of the Study

The objectives of this study include the following:

1. To find out the print and electronic information resources provided by university libraries for undergraduate students use in Niger State.
2. To find out the print and electronic information services provided in university libraries for undergraduate students in Niger State.
3. To determine the level of satisfaction with print and electronic information resources and services provided by university libraries in Niger State.
4. To determine the challenges faced by undergraduate students in using print and electronic information resources and services available in university libraries in Niger State.

1.5 Significance of the Study

The findings of this study will be useful for planning and provision of relevant and up-to-date library services in university libraries in Nigeria in general and Niger State in particular. It will enable the university libraries to know the needs of their patrons (undergraduates) better and how to provide library services that meet their expectations. It will also assist librarians in advancing convincing reasons to their managements for improved funding for information service delivery. The findings will also provide guide to library managers on library budget for acquisition of information resources. This will ensure judicious and proportionate financial allocation based on needs and preferences of library patrons. This will go a long way to assist libraries achieve user satisfaction in provision of information resources and services. The findings will also have significant impact on future library building plan or expansion in terms of provision of space for different types of library services. Lastly, it will also aid library managers on information resources development policy to provide better services in academic libraries.

1.6 Scope of the Study

This study covers two university libraries; Federal University of Technology Minna (FUTM) and Ibrahim Badamasi Babangida University Lapai (IBBUL). Federal University of Technology, Minna (FUTM) operates on two Campuses; namely Bosso Campus and Gidan Kwanu Campus. The library located in Bosso Campus is known as Muhammad Awwal Ibrahim Library while that of Gidan Kwanu Campus is known as Ibrahim Badamasi Babangida Library. The undergraduate patrons of these two libraries constituted the study population of Federal University of Technology Minna Library. In this regard, whenever reference is made to FUT Minna library in this study, it refers to Muhammad Awwal Ibrahim Library and Ibrahim Badamasi Babangida Library in the two campuses. Ibrahim Badamasi Babangida University Lapai (IBBUL) operates on one campus where the library is located. The name of the library is Abubakar Gimba Library. The undergraduate students' of these two universities that are located in Niger State constituted the population of this study.

1.7 Limitations of the Study

This study focused on the main or central libraries of these universities and not departmental libraries or any other library operated by the two universities elsewhere. The post-graduate students and other categories of library users or branches and departmental service points of these two universities are not part of the population of this study whether such libraries are situated in these campuses or anywhere else. The population of study is the undergraduates' students of 2012/2013 session of the two universities in Niger State. The IBBU Lapai run four year degree programme while FUT Minna run five year degree programme. At the time of conducting this study, Federal University of Technology Minna had not commenced the process

of admission of fresher students for 2013/2014 session and the 500 level students were writing their final examinations. Some of the departments had completed 500 level final year examinations at the time of administering the questionnaire and because of this; 500 level students were not included in this study since they were not available for sampling. In the case of Ibrahim Badamasi Babangida University Lapai, the 100 level students' admission for 2013/2014 was ongoing and students had not resumed. The study population was limited to 200, 300 and 400 level undergraduate students of 2012/2013 session of FUT, Minna and IBBU, Lapai.

1.8 Operational Definition of Terms

The following terms are defined in the context in which they have been used in this study:

E-resources: Information materials that are in electronic format such as CD, Computer readable, database, web databases, Internet, etc.

Print: Information material whose information content is printed on paper using ink and bound together or not in form of books, journals, magazines, indexes, pamphlet etc

Services: These include loans, reading spaces, reprographic services, referral, interlibrary services and directional and personal assistance offered to users to facilitate use of information resources in the library

Utilization: A process or act of using or deriving benefits from resources or services to accomplish task or desire

Undergraduate: A student admitted to study a first degree programme in a university leading to the award of a Bachelors Degree.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter review literatures that are directly related to the topic under the following sub-headings:

2.2 Concept of Library

2.3 Theoretical and Conceptual Framework

2.4 Available Print and Electronic Information Resources in University Libraries

2.5 Print and Electronic Information Services in University Libraries.

2.6 Utilization of Print and Electronic Information Resources and Services in University Libraries

2.7 Challenges of Utilization of Print and Electronic Information Resources and Services in University Libraries

2.8 Summary of the Review

2.2 Concept of Library

A library is always associated with information management and services for general use or to particular users or organization. The library is a universal phenomenon which underscores the importance of information resources and services in human activities. The American Library Association Glossary of Library and Information Science (1983) defined library as ‘a collection

of materials organized to provide physical, bibliographic, and intellectual access to a target group with a staff that is trained to provide services and programmes related to the information needs of the target group.' The UNESCO (1976) as cited in Chiemeke at el. (2007) sees library as "an organized collection of published books and periodicals and of other reading and audio-visual materials and the services of staff to provide and interpret such materials as are required to meet the information, research, educational or recreational needs of its users." These definitions presupposes that information resources are required to provide services, but it also sees the physical organization and administration of information resources based on defined principles of library and information science as inseparable. This is because the information resources (print and non print) were physically organized and confined to a location and users go there to consult them.

Mitchell (n.d.) strongly argued in support of the above definition that "without organizing principles, collection of information resources of any substantial size cannot be used effectively or efficiently." Mitchell further buttressed his argument with the fact that without organizing principles "you don't have an effective library – you have the Internet", which he described as characterized by "arduous process of hit and miss, of trial and error, with no assurance that the search engine has really turned up all the relevant sites." One could also contest the fact that, it is not only whether all the relevant sites were turned up, but whether what was retrieved was even relevant to the searcher and worth the time and resources expended in the process. It can be deduced from the above, that emphasis is given to physical organization of information resources and personnel who manages and assists users because library resources were mainly in print format and they were organized and stored in a designated place or location. However, opinions have begun to vary on this because it is becoming increasingly challenging that emerging trend

and advances in electronic publishing have given rise to born digital resources, digitization, databases and web resources. The ICT is fast changing the information landscape and concept of library and its operations as given above. The new information resources are not limited to physical, bibliographic, targeted group and employing a staff in its strict sense to provide access and services. It is much more than that because it has deviated from the traditional norm of information resources format, ownership, preservation, services and direct intermediating role of librarians. A cursory look into the future of academic library monograph collections, Kieft (2010) noted will be:

> A group of materials, a set of services that help people identify and use them, set of (increasing electronic) spaces where people interact with them and with each other, a cultural memory institution, a node in a network of similar institutions, and a space for teaching and learning.

Kieft further noted that with this scenario and the development such as web search, 'cloud' library, increasing growth in electronic text and scholarly publishing; for anyone to believe that the idea of library is dependent on books is not tenable, rather it is about interaction with and use of various types of information resources such as texts, images and sounds. This implies that future libraries will not place emphasis on monograph collections, as places or institutions as was traditionally conceived and defined above; rather will be a services hub that uses all available resources for teaching and learning. Freeman (2005) sees future libraries as learning laboratories that accommodates variety of learning formats and while Bennett (2003) argued that academic libraries should not act as traditional storage for books but one that focuses on processing learning by bringing resources, learners and experts into an environment that facilitates collaborative learning.

University Libraries

Library information resources and services are indispensible to the conduct of teaching, learning and research activities of the universities. A university is regarded as the apex of academic and research work and libraries established to provide information resources and services to support its activities are referred to as academic libraries. Reitz(2004) defines academic library as 'an integral part of a college, university or other institution of post-secondary education which is established to provide information resources and services to support learning, teaching and research needs of students, faculty and staff."

The provision of library services involves a number of activities which include identifying user's information needs and appropriate information materials to satisfy these needs. The identification of user's information needs begins at the level of corporate organization or institution which the library is established to serve and to which individual user belongs or works for. In the university system, the undergraduate students' programmes and activities deserve adequate information resources and services support from the library. All the undergraduate programmes need information resources in terms of variety and quantity because of the nature of their progammes and its population. Information resource materials must be acquired, processed, organized and made available or accessible to these users by the University library in their institution. The efficiency and effectiveness of services provided is determined by the availability of relevant information resources and how they are managed. These information resources include print, non-print and electronic information resources. Libraries are expected to acquire information resources for all categories of its users irrespective of format. The categories of university library users include lecturers, undergraduates, post-graduates, non-teaching staff and the community.

The functions of academic institutions revolve around teaching, learning and research. Academic institutions play vital role in national development through knowledge generation, stimulation of technological innovation, and human capital development. Thachill (2008) noted that 'academic libraries are part of an educational process and have a mission' which is derived from the institution they are established to serve. There is a positive correlation between the mission of different types of libraries and the institution or organization that they are designed to serve. To buttress this Chaturvedi observed that:

> There is no better way to judge the quality of an educational institution than to look at its library. If the library is weak, the institution is mediocre and as corollary if the university or college has a strong library; there is every possibility that the institution itself is outstanding. The better the library, the stronger the faculty, the college will be able to hold hard the higher quality students it will draw. (1994: vii)

Academic libraries information resources (print and electronic) and services must be able to support students; staff and faculty in their research and pursuit of education to enable the institutions achieve their objectives. Arguing in support of this, Thachill (2008) expressly stated that "academic libraries exist to support students, staff and faculty in their research and education by procuring and making the best print and electronic resources available." It is on this premise that it has become the tradition of the academic institutions to establish libraries and in some cases have branches such as schools and departmental libraries to help students locate in-depth materials on major courses of study (Aman, et al.1999). The relationship libraries and undergraduate students is supportive and or better described as collaborative for the existence and successful accomplishment of the mission of academic institutions.

Universities require adequate provision of relevant information resources and services support from their libraries to effectively carry out research, teaching and learning. Library

resources and services are indispensable to the success of academic institutions' activities and because of this; Aba (2006) emphasized that 'higher institutions must optimize the development of libraries.' To achieve this task, educational institutions need adequate funds, collections, infrastructure and technologies for libraries to provide required services (Seth & Parida, 2006). The role of academic libraries is so important that Agboola (2000) stated emphatically that "no university can lay claim to academic excellence without a good library to back up its teaching, research and public service mandates", adding that "academic library resources provide a good measure of an institution's excellence and quality." The academic library resources and services are the pride of any academic community because without it there can never be high quality research and graduates. To backup this assertion, Oyewusi & Oyeboade (2009) pointed out that "faculty members and students have realized that the libraries have great roles to play in the provision of information necessary for their day-to-day research." In pursuance of academic information needs and in line with the mission of institutions, academic libraries collect a variety of information materials for preservation and use of patrons as it acts as a medium of getting the latest scientific and technological information either in print or electronic form. Oyewusi & Oyeboade noted that the purpose of university libraries is "to support teaching, learning and research in ways consistent with, and supportive of the institutions' missions and goals." This justifies why academic libraries demand for adequate funding to enable them acquire information resources for staff and students use.

2. 3. Theoretical and Conceptual Framework

This study was guided by "two communities" and information utility theories.

Theoretical Framework

The concern for information resources utilization arose from the presumed underutilization or non-utilization of Research and Development (R&D) outputs by policy makers. The subject of information acquisition, dissemination and use was deeply rooted or originated from social science theories. Caplan, N. (1979) as cited by Rich (1991) reported that social scientists and "pure" scientists believed that;

i. Relevant research outputs were underutilized or not utilized
ii. Usable research outputs should be disseminated to users
iii. Society should benefit from increased information and use.

The R&D group encouraged the utilization of knowledge worth producing and they emphasized on the rational and use of knowledge in decision-making process. This led to the "Two communities" theory which was basically about the existence and gap between information producers (Scientists, researchers, providers) and users (policy makers, businesses etc). Some of the explanations offered for the existence of "two communities" theory which accounted for non-utilization were in terms of the relationship between researchers and research systems to policy makers and policy making systems. It was thought that the two existed in "separate worlds with different and often conflicting values, different rewards systems and different languages." Some of the reasons advanced for this gap included;

i. Differences between theory and practical realities
ii. Social scientists deals with esoteric issues and government policies are practical and action oriented in nature
iii. Concern for misuse of information by political power

Utilization

The word utilization is derived from the verb use or utilize which connotes use and derivation of benefits from something. This term is commonly used in librarianship to refer to interaction and patronage of information resources and services provided by the library. Trice and Treacy (1986) noted that theories of utilization measurement depends on the variable being studied like design and implementation process, characteristics of the information system, the tasks, the individual user or interaction. This means that utilization needs to be defined and operationalized within the context that it wants to measure. In this study, utilization is based on Fishbein's Theory of Reasoned Action model which relates use of information system to individual intention, attitude and objective towards using the system. This theory sees use and non-use of information system from the perspective of benefits that can be derived from the system and this is predicated on intention, attitudes, beliefs and perceived benefits. In the light of this, Trice and Treacy (1986) defined utilization in the context and operations of this theory as "the active use of the system or some aspect of the system and to model it as a binary variable, use and non-use of the system."

According to Schlee (1990) Information Utility Theory postulates that users of information, goods and services are rational beings that could select and compare the satisfaction or information materials which provided for their maximum needs. The information utilization theory deals with the dynamics of use, interaction and users' satisfaction with information resources and services. Van-Lill (2001) noted that user studies tries to examine users with respect to library or an information system and the focal areas are individual user characteristics and interaction with the information system. Information Utilization Theory tries to relate the utilization of information with value of use and users' satisfaction with the information system.

Information Utility Theory looks at the dynamics of user studies in library and information studies; the information consumer behaviour and library information system use. In this study, information system operations, availability of information resources, undergraduate students' knowledge of available information resources, accessibility and retrieval skills and value play significant role in determining the utilization of university libraries.

Conceptual Model

This study adopted and modified the conceptual framework from Mason-Mitroff's study of the relationship between individual utilization of information system as cited by Trice and Treacy (1986). This was formulated to show the relationship between library information facilities (resources and services) and utilization. This is represented by Figure 1.1.

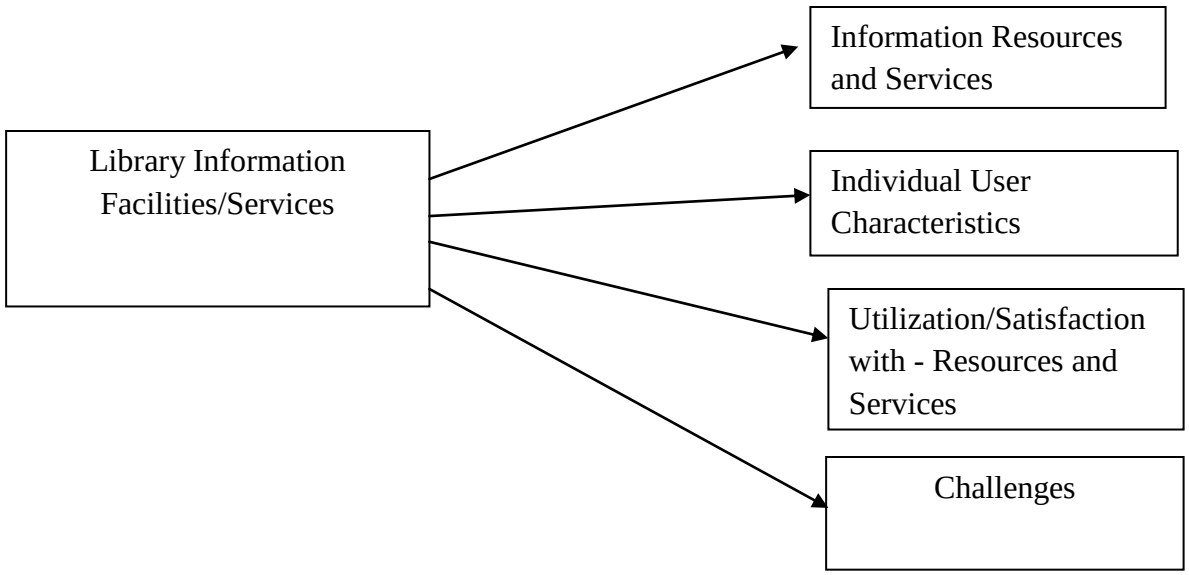


Figure 1.1: Conceptual Framework

Figure 1.1 demonstrates that utilization consists of discrete events that are interdependent and inter-related. The library represents one of the oldest information systems in history and still faced with systemic issues of information resources and services to its clientele.

Information Resources and services - deals with available information resources and services. It also includes availability and access to information resources and services to meet the needs of undergraduate users.

Individual User Characteristics – Information utilization depends on user characteristics such as attitudes, skills or competencies, experience, intensions of using information, benefits and dependency or reliance on the system.

Utilization/Satisfaction with Resources and Services - deals with user interaction with the system, resources and services, outputs from information system. It also includes the participation or involvement and technical support from the organization, the rules, structures, policies and procedures that could affect utilization.

Challenges - deals with issues of suitability of information system to different types of users, availability, access and challenges of use of resources and services.

2.4 Available Print and Electronic Information Resources in University Libraries

Information resources required to meet the information needs of academic community are many and varied, but generally it can be categorized into two, namely print and non print. Although print materials have remained the predominant medium of information storage and communication, the non print resources have always been part or constituted a certain percentage of library information materials. The objective of academic libraries is to explore all the

information resources and services available and accessible, which in the opinion of Oyewusi and Oyeboade (2009) should be sufficient in quality, depth, diversity and currency to support the institution's curriculum. Several studies have been conducted on uses made of both the print and electronic information resources in libraries. The use of print resources is well established in it's over 500 years of dominance as medium of communication. The initial skepticism about electronic information resources and services and its value for academics has gradually changed. The emphasis now is how to blend print information resource with electronic resources to support academic activities in digital age.

Print Information Resources in University Libraries

The printed information resources of academic libraries include textbooks, indexes, abstracts, journals, reports and manuscripts. Although, some of the information materials in academic libraries existed in audiovisual format, they constituted a negligible percentage of library resources when compared with print information resources. Ifidon and Ifidon (2007) observed that libraries "built their reputation and quality assurance primarily on their ability to acquire a broad base of books, journals, grey literature and electronic information resources in advance of demand in order to meet as many information needs as possible". The printed information resources remain the predominant and traditional library information resources in form of books, periodicals, newspapers, pamphlets, indexes, magazines, abstracts, maps, atlases, and reports. The libraries are the hub and centre of information resources and because of this the physical size of the library and quality of its collection project institution's profile.

The undergraduate students constitute the largest clientele of academic libraries. However, some academic institution libraries could not provide services to satisfy their clientele's needs

while increasing population threatens the ability of libraries to keep pace with size and quality. Ifidon and Ifidon (2007) reported that book ratio per users in Nigeria was set at thirty which was seldom met while in some cases it is as low as two or three. Academic library users continued to rely on libraries as the situation got worse. Despite this bad state of academic libraries, undergraduate students like many other patrons of libraries still had faith, trust and confidence built around the academic libraries over the years as dependable allies. Dickson (2006) in survey of undergraduate students reported that nine out of ten students were able to find needed books from their academic libraries while 70% of respondent used traditional printed resources. Respondents were also asked about access and utilization of some specific information resources; 89% reported agreed they usually find needed books and 88% for periodicals in academic libraries.

Traditional printed information resources were carefully selected by professional librarians to ensure that materials acquired by the library met the standards of information required for teaching, research and learning at the various levels of study. Gbaje (2007) noted that professional librarians use 'criteria that help establish the authority and accuracy of the materials' and also ensures that the resources 'meet the needs of academic and research community by improving their services and enhancing their resources.' Biradar, Biradar, Kumar and Mahesh (2009) surveyed 101 undergraduate students use of information resources. They found that some respondents preferred printed information resources such as; books (43.56%), periodicals (27.72%), dictionaries (50.49%), yearbooks (44.55%), encyclopedia (40.59%) and directories (9.90%). This clearly indicated that printed information materials were still useful and patronized by undergraduate students. MacColl(2010) pointed out that print materials were "still in use because of portability value, and relative ease of access and use." These conventional library

resources still provide support to learning and they improved library collection and reference services.

Electronic Information Resources in University Libraries

The fact remains that printed information resources were the predominant means for providing information resources and services in academic libraries. However, as earlier observed, non-print information materials have always been part of library information resources in form of audiovisual materials. Thus, whenever reference is made to library information materials, some non-print information materials (audio, visual or audiovisual) such as microfiche, microfilm, tapes, cassettes, slides, audio, are listed or mentioned. For instance, Popoola and Haliso (2009) described information resources as those information bearing materials in both printed and electronic formats which include journals, newspapers, magazine, textbooks indexes, abstracts CD-ROM database, videotapes, cassettes, diskettes, magnetic disks, Internet/email, microfiche, microphones. In a related discourse, Oyewusi and Oyeboade (2009) stated that academic library 'resources include not only traditional print-on-paper media like books, journals, newspapers and maps, but also audio visual materials like records, audio cassettes, video cassettes and projectors.' The non-print information resources have continued to increase in variety, capacity and compactness contrary to the print technology which has remained basically on paper.

The technology of printing and procedure has barely changed drastically over the past centuries since the time of Johannes Guttenberg in 15th century (Burke, 2009). The electronic information resources (Internet, databases, web, CD-ROM, electronic books (e-books) and electronic journals (e-journals) became the by-products or offshoot of non-print resources which had existed in libraries. It was a further development as predicted by Mitchell (n.d.) that 'academic

library of the future will use all kinds of carriers of knowledge and information, with each new means of communication enhancing and complementing the strengths of all the previous means. The emergence of electronic resources was a blessing and an opportunity to enhance academic library resources and services to its community. It is interesting to note that while some scholars see the advent of electronic information resources as complementary to print information resources, others believe it has the potentials of completely replacing it in the nearest future. Agaba (2005) saw it as a 'shift from printed forms of information resources to electronic information materials.' The word 'shift' could be interpreted to mean or imply that electronic information resources will replace the print information resources if the later is accepted because it could result in better quality materials for research, teaching and study for academic staff and students.

However, Online Computer Library Centers (OCLC) (2005**)** study on perception of libraries and information resources strongly disagreed with total shift to electronic resources because libraries were seen as being more traditionally credible in 'providing more accurate information than electronic resources while electronic resources were seen as being more reliable, effective, easy to use, convenient and fast.' The digital or electronic resources seem to offer easy access and appear to be more affordable than ownership of print resources. Troll (2001) noted that it has risk of loss, except if archival records are created or migrated to digital collection or new future formats. This assertion is still true today, despite improvements in digital resources storage and preservation devices at affordable prices.

The uses to which available information resources (print and electronic) are put by undergraduate student users of the university libraries in Niger State is also paramount to this

study. The undergraduate students require information resources to achieve their objectives of study and learning. The information resources required vary and their availability and use by undergraduate students is part of what this study was designed to unravel. The use of electronic information resources have increased tremendously among undergraduate students as noted by Marcum and George (2003) in a survey of information users in colleges and universities, it was reported that 92.50% of students own desktop computers and over 40.00% had printers, scanners and laptops. Although, the report found that 51.60% of undergraduate students use print "all" or "most" of the time for their course work, they indicated preference for electronic resources. The students also indicated that information resources they accessed and available online were sufficient for their course work.

In another study by Van Scoyoc and Cason (2006), it was found that undergraduate students relied on Internet for their information needs but observed that they were not fully skilled in ICT for searching. This was also supported by Wu and Yeh (2012) that Undergraduate students still needed some competences to effectively and successfully use web site and electronic services. He further stressed that they needed information literacy skills, which required a person to be able to recognize when information is needed, ability to locate, evaluate and actually use information. This was also reported by Callinan (2005), Gross and Lathan (2009) that even though undergraduate students always considered themselves computer literate, their knowledge and information searching skills were insufficient. OCLC (2006) also reported that 89.00% of U. S. undergraduates began their information search from search engines. However, Kattimani (2010) opined that undergraduate students utilized electronic resources for the purposes of project writing represented by 68 (81.20%) and 50 (62.50%) for presentations. Ani (2010) conducted research on Internet access and used by Undergraduate students of three Nigerian universities and found out

that Internet was extensively used, but mainly from private and commercial cyber cafés within and outside the campuses.

2.5 Print and Electronic Information Services in University Libraries

Print Information Services

One of the most valuable services in a traditional library system is in collection development and acquisition of information materials. This involves the use of standard criteria to select relevant and high quality information resources with or on behalf of patrons. The services of cataloguing and classification, circulation, provision of reference services, preservation, conservation and archiving of valuable information resources which have earned libraries trust and reliance over the years were all done for the ease, convenience and satisfaction of patrons. Arguing in favour of traditional (print) resources and the role of librarians, Troll (2001) explained that 'librarians facilitate skill acquisition and information retrieval not web 'surfing', intervene between users and information to help users evaluate what was retrieved while they (librarians) assumed greater responsibility for learning.

The resourcefulness and skillfulness of the library staff in selection, processing, organization and dissemination of the information resources was and is a prerequisite for good library services. Fabunmi (2004) noted that the quality of library services depended to a large extent on the quantity and quality of its collections and the staff who provided the services. A good library service must blend with good staff and relevant information resources to provide services. The print resources were used to provide services such as lending, reference, user education, loans, bindery, and photocopy services (Agboola, 2000). Similarly, Ntui and Utuk (2008) also listed the following printed information resources services:

i. Lending services
ii. Interlibrary loan and document delivery
iii. Reservation service
iv. Provision of seating and study facilities
v. Reference service
vi. Current awareness service
vii. Exhibition and displays
viii. User education
ix. Information literacy programme

Other services include assistance given to patrons at the point of use, bindery services, selective dissemination of information (SDI), clippings, compilation of bibliographies, short term loans, referral services, indexing and abstracting. Printed information services in academic libraries are provided manually using resources held in the library or with cooperating libraries. Also related to services, Agboola (2000) reported that university libraries use manual charging system for circulation and an average of four books were charged to students for home use in Nigeria.

Ifidon (2006) also listed the printed information services as:

a. Loans transactions(whether for use within the library or home borrowing or overnight or weekend loan);
b. Reference services;
c. Inter-library loan;
d. Reprographic services;
e. Bookbinding;
f. Compilation of reading list and bibliographies;

These were means of providing print information services and they continued to be relevant and demanded by some of the academic library patrons in academic institutions.

Dickson (2006) reported that 70.00% of undergraduate students acquired information skills through personal experience and help from students, while credit course taught by librarians accounted for only 7.00%. He further reported that two out of three students reported received some kind of assistance and help from library staff while using library books and journal articles. Dickson reportedly asked undergraduate students about three most important reasons for using the library, he found that availability of quiet space for reading recorded the highest response of 59% which was one of the basic services of printed information resources based library. The other two were availability of computer /electronic resources (58%) and availability of some specific materials or information (56%). Dickson also asked respondents about library services used most in the last 12 months; traditional information resources (printed) recorded 75% and third highest after computer access (77%) and electronic databases/article indexes (76%). Similarly, 53% of respondents opted for onsite access and usage while 47% preferred remote access. Biradar, Kumar and Mahesh (2009) reported that 87.12% of undergraduate students visited the library to borrow books and 80% to read books and journals. He also reported that respondents were satisfied with such services as: lending, 73(72.27%); reserve, 72(71.28%); reference, 80(79.20%) and current awareness services, 70(69.30%). However, respondents were not satisfied with interlibrary loan and user instruction/orientation with responses rate of 68(67.32%) and 57(56.44%) respectively.

Electronic Information Services

The non-print information resources found in academic libraries which were the precursors of electronic information resources and services included photographs, video cassettes, audio

cassettes, projectors, microfiche, microfilms, telex, fax machines and telex. Some of these resources were used to provide complimentary services or to facilitate access to information in other media such as microfiche and microfilm reader to access information in microfiche or microfilm respectively. The information and communication technology driven digital environment has significantly changed the services librarians provide from manual to on-line reference, online document access, direct borrowing, self-checkout system and user instruction.

However, whether these are better compared to human mediated or librarian mediated service still remain to be seen. What is certain according to Rao and Babu (2001), 'no innovation has impacted the library profession to such a great extent as the Internet, world wide web and networked resources' which had changed the fundamental roles, paradigms and culture of libraries and librarians once for all.' The areas affected include control and ownership of resources, physical handling and processing of information materials, direct and personal contact and assistance to resources and services. Others include manual operations like cataloguing and classification, restricted operational times. This motivated academic libraries to respond to user's demand, 'to keep up with the demand for remote access to electronic resources, and shifted focus from ownership of information to the model of 'anywhere' 'anytime' access (Covi & Cragin, 2004; Mac Winnie, 2003). Some of the electronic information services available to library users in e-environment include; remote enquiry services, web-based catalogue, dedicated web (library web site), FAQ Page, interactive services, remote resources links, links to other OPACs, online user instruction, online reserve, online reference, self check out of books and alert services. Other services include wireless or remote access, Internet services, downloading, scanning, social networking, web based catalogue access to university library or other libraries on the Internet.

Ifidon and Ifidon (2007) also listed some of the electronic information resources services to include e-mail, Internet connectivity, CD ROM searching, abstracting and indexing services, computer typesetting, current contents, publishing and online services. The Massachusetts Institute of Technology (MIT) (2011) survey of undergraduate students found that 1136(61.00%) preferred electronic information resources and services while 383(14.12%) preferred print. The survey also assessed the responses to individual information resource types; and electronic journals recorded 898(48.70%) while print recorded 418(22.60%). In consideration of the opinion of respondents about their preferences for printed books and electronic books, it was found that electronic books recorded 357(18.60%) while printed book had 1127(58.90%). This showed that printed textbooks were preferred to e-books.

Ani (2010), studied Internet access and use by undergraduate students of University of Calabar, University of Uyo and Rivers State University of Science and Technology. He found that university libraries and computer centers had poor infrastructure, connectivity and non –stable Internet services which made students to patronize private and commercial cyber cafes within and outside the campuses. This showed that Internet services were still poor in university libraries which made students to patronize cyber cafes and commercial Internet services within and outside the campuses.

2.6 Utilization of Print and Electronic Information Resources and Services in University Libraries

The assessment of utilization and satisfaction of undergraduate students with different types of information resources and services also presented another interesting aspect of this review. To some scholars, traditional library resources (print) are no longer seen as primary

providers of information (Research Information Network & Consortium of Research Libraries in British Isles, 2007); as such some library users perceived library as something that is consulted at the end or at best in the middle of information search (Sharifabadi, 2006). This has serious implications for university libraries that acquire information resources (print and electronic) to provide services for their users.

Several studies have been conducted on uses made of both the print and electronic information resources in libraries. The use of print resources was well established in it's over 500 years of dominance as medium of communication. The initial skepticism about electronic information resources and services and its value for academics has gradually shifted to how to blend print information resources in digital age. Library resources and services are now available in electronic format including full text, which can be searched, browsed and printed remotely from computers (Covi & Cragin, 2004). The exploitation of these information sources was aimed at ensuring that academic libraries provided relevant, timely and current information to support academic activities. Dickson (2006) reported that availability of computers and electronic services were among the reasons for undergraduate students' patronage of academic libraries and these recorded 58% of responses each. Dickson also reported that more than 70% of students indicated that computer access and electronic database articles were the most utilized. The report further revealed that computer access accounted for77% responses while electronic database articles and indexes recorded 76% responses.

In a study by Biradar, Kumar and Mahesh (2009), it was reported that undergraduate students expressed satisfaction with the following electronic services; online 57(56.43%), Internet 50(49.50%) and CD-ROM 54(53.46%). The researchers concluded that the expression of

satisfaction may be attributed to lack of awareness and inconveniences of use. Adeniran, (2013) also reported on usage of electronic resources by undergraduate students and found that 207(80.90%) use e-resources and it positively impacted on their academic performances. The purposes of using e-resources according to him were for research, current awareness, assignment, e-mails, information and news. This showed that electronic information resources were well accepted by the respondents. In United Kingdom, Faculty staff became worried about the impact of use of technologies by NetGen or Millennial students who were fond of using technologies because faculty staff believed that students were wasting their time and this could hinder their studies. Lippincott (2008) under a UK based Joint Information System Committee (JISC) conducted a research on how mobile technologies and use affected academic libraries. It was reported that;

1. Students 'use mobile phones, laptops and PDAs to support learning'
2. 'use software to create, manipulate and present contents'
3. 'seek peer support via informal network of families by using e-mail texting, chat and skype'

This means that students used these technologies to enhance learning and sharing and exchange of information which helped them in their academic activities contrary to the belief of faculty staff.

In another study, Kattimani (2010) administered structured questionnaires to 80 library users at Honeywell Library, Bangalore, India to establish their awareness level of online information resources. It was found that majority of Internet users 65(81.2%) used it for projects; 50(75%) for presentations and 70(88%) used library home page, while 62(78%) used web-OPAC. On the purposes of using the Internet, out of 80 respondents, project recorded 65(81.2%); preservation, 50(62.5%); and knowledge accounted for 45(56.2%). It was also found that 72% of

the respondents rated Internet resources as good, very good and excellent while 70% reported that they were satisfied with services rendered. Kattimani (2010) noted that the role of the librarian was critical in creating quality awareness of the on-line information resources which included;

i. Need for formal library instruction /online information instruction
ii. Teach and promote use of advanced searching
iii. Select databases that have relevance with user community. Library should create awareness through e-mail alert system.

In a survey of students' use of Internet at Obafemi Awolowo University Ile Ife, Nigeria, Jagboro (2004) showed that 38.24% and 22.06% of university students used Internet weekly or daily while 11.76% used it on monthly or bi monthly basis. Oyewusi and Oyeboade (2009) studied the accessibility and use of library resources by undergraduate students of Ladoke Akintola University (LAUTECH) Ogbomosho, Nigeria. The researchers drew a random sample of 600 students and 479 copies of the questionnaire were completed and returned while 393 were found useful for analysis. The findings showed that 297(75.6%) reported got their information from books and journals while 79(20.1%) searched information from the Internet. On frequency of visit to library and Internet, 148(37%), 102(26%), 124(31.6%), and 43(10.94%) went to the Internet monthly, twice monthly, weekly and daily respectively while those that went to library daily was 204(51.7%). This showed that library was heavily patronized by undergraduate students.

On availability of information resources in Internet and library, 349(88.8%) reported that Internet had more information resources while 44(11.2%) disagreed or indicated the library had more resources. On the question of accessibility, 313(79.7%) agreed that information was more accessible on Internet while 80(20.4%) disagreed. Surprisingly, when the students were asked to indicate the IT facilities available and accessible in the library, it was found that photocopy

recorded 94.4% while ‘all the respondents indicated that electronic databases, OPAC, Close Circuit TV (CCTV), e-journal, microfilm and facsimile were not available for use. What were the bases for their assessment of electronic information resources? The possible answer may be that the respondents’ accessed Internet facilities outside the library environment as these IT facilities were not used from the library. The print resources were highly patronized by students of LAUTECH as reported above.

The current Internet access and use statistics showed that in 2012, about 48.4 and 6.6 million Nigerians accessed and used Internet and Facebook respectively. This showed a remarkable improvement in awareness and Internet services. MacColl (2010) noted that new generation students required libraries to ‘procure print and electronic resources; providing access to the resources through well designed library websites and technical support; and by providing access to a physical space in the library for intellectual and interactive work.’

A survey of undergraduate students and information technology in Colorado, United States of America by EDUCAUSE Centre for Applied Research (ECAR) (2008) reported that 82% of students in their survey owned laptops. It also reported that ‘early adopters of technology accessed the Internet from their handheld devices weekly or more often.’ The devices the study found in use by students or NetGen students included ‘mobile/smart phones, Personal Digital Assistants (PDA’s), clickers, personal response systems, MP3 players, IPods and laptops/notebook computers.’ In the light of these findings, academic libraries were advised to consider “retooling for mobile users and mobile devices; they should examine the consequences of mobile and the opportunities for innovation in the areas of content systems and tools, services, and environments; both physical and virtual” in provision of services and packaging of information for users (Lippincott, 2008). In another study of academic use of electronics, Woodward (1997) found that

academic staff and students disliked reading from screen especially if the image quality was poor and suggested that the use might improve if quality of interfaces and ease of use improved. However, Tenopir and Kung (2002) in a study of review of electronic journals conducted between 1997 and 2001 noted that there was variation among disciplines in reading habits, but noted that there was an overall increase in the population of electronics used as opposed to print journals used. Libraries use various methods to promote use of electronic resources like direct access from OPAC. The users were linked directly to the electronic resources from the library OPAC interface (Channey, Bulliard and Christiansen, 1999**).** This was where libraries have Internet facilities as advised by Gbaje (2007) that it was "important for academic libraries to make some of their services available online and accessible remotely to meet the growing population of online patrons."

Marcum and George (2003) in a study of national information use survey of 3,234 faculty members, graduate students and undergraduates from 392 doctoral research universities (public and private) and private liberal arts colleges reported that 93.9% of the respondents of the combined group of all institutions 'agreed strongly' or 'moderately' that they were "comfortable retrieving and using information electronically" while at category level, the responses was 94.6% for undergraduates. Respondents were also asked if they were "comfortable locating and using print information." Those that expressed 'agreed strongly' and 'moderately' (including undergraduate students) for print were 94.8% as against 93.9% for electronics. The print resources still impacted positively on patrons because it has standard and systematic approach to locating information established over the years.

The preference and choice of information resource format by undergraduate students was another area that this study seeks unravel. The emergence of electronic information resources

revealed the differences of preference between the younger generation mainly students often referred to as NetGen and the older generation who are most familiar with traditional library resources and services. The target population in this study is undergraduate students that have a lot of passion for technology and always eager to get things done fast. The availability of two or more options present the opportunity for choice and preference based on individual reasons. The choice between print and electronic information resources, services and use presented this opportunity. To some library patrons, traditional libraries remain the acknowledged archive of information and services for academic institutions and perform the vital functions of collecting and making available the information most germane to the patrons. In support of this view, Ndeh (2008) opined that new technologies complemented and changed the older ones and when they did displaced them, they did so over time and to the extent that the new technologies offered demonstrable advantages. The author posited further that 'print did not destroy oral tradition, it extended its reach'; which implied that electronic library would not display print based library.

In a similar analogy and to support Ndeh's position, Onwuka (2007) observed that since 'cinema did not destroy live theatre, radio news did not destroy newspapers, and television did not destroy radio', e-library or digital revolution was 'not going to obliterate books or print media.' Grothkopf (1997) in Rao and Babu (2001) also observed that despite numerous digitization projects, electronic media was not as dominant as print media as such the "digital and paper-based library will continue to co-exist because electronic publications were not developing so much at the expense of print media but only as a compliment. This argument seem convincing based on antecedent, but the rate of growth of digitalization and born digital resources is alarming and most importantly, the new generation is inclined to digital resources at the expense of print. It is also important to note that some vital and rare print resources are still found in libraries and that means

print and digital resources will continue to complement each other for some time into the future. The two forms of information sources provide information support to academic institutions and the concept of 'library commons' or interaction of users, resources irrespective of format is becoming the emerging trend in libraries. Library Commons refers to a situation whereby both print and electronic resources and services are provided and made available to library patrons within the same environment without emphasis to any particular physical format of information resource.

The strongest argument in favour of electronic resources is ease and quick search results, and researchers often turn to print for broad, conceptual research or background information because important concepts and related topics are readily located in print indexes, with their controlled vocabularies and syndetic structures (Bintliff, 2005). Bintliff concluded that "print resources will remain better for certain purposes until more effective electronic multitasking is possible and until monitors are vastly improved to make online reading easier." However, Law (2009) noted that "the ability of the researchers to access the library's content is not simply convenience, but rather a necessity if the academic library is to preserve and enhance its role as an information gateway for current and future generations of academic researchers." Law observed further that there was no indication of a "move away from libraries as a gateway institution is necessary or much less permanent, but rather the drift is occurring because researchers are increasingly demanding for a better research experience." The print and non-print information resources were used to provide information services in academic libraries.

In recognition of this, Law (2009) asserted that academic libraries are 'the first choice among students and faculty members alike when they must locate high quality research materials'

and that students and researchers were turning to the Google in growing numbers, not because of its quality content but because academic library patrons are often confused and disappointed by their library search experiences. Still arguing in favour of traditional library services, Oyewusi and Oyeboade (2009) unequivocally stated that 'even though library users may make limited use of library resources; they continue to trust libraries as reliable source of information for their academic pursuits.' The implication of these expositions about print resources indicates that, though electronic resources may be gaining lots of support or even preferred by some library patrons, some scholars and library patrons still have faith and trust in print information resources. MacColl(2010) pointed out that print materials were still in use because of portability value, and relative ease of access and use. The conventional library resources (printed) still provide support to learning; they improve library collection, reference services and this necessitates the need to provide spaces and facilities for their use in the library (Wang & Hwang, 2004).

It is the opinion of some scholars that libraries need to provide comfortable study places for use of print and electronic resources within the library. It is one of the primary responsibilities of libraries to provide physical spaces for study, and the new system (information commons) require spaces for dual purpose for technologies for accessing electronic resources and print resources (Mac Winnie, 2003). It is in recognition of the value and usefulness of print information resources, that an integrated system of providing information resources and a networked electronic environment referred to as Information Commons was adopted or proposed for libraries in the digital age (Moyo, 2004). Information Commons is described as "one step" shopping that provides complete library services for learning (Bennett's editorial, 2008). The Information Commons create opportunity to aggregate or provide integrated information resources to support research, teaching information skills which expose students to print and electronic formats and

expert technical support. This is advocated for this era of transition or hybrid information resources that recognizes the value of information sources not its ease or medium of access. In an environment of hybrid information resources, information could be obtained from virtually anywhere through blogs, personal experience, books, journals, magazines, articles, expert opinions, encyclopedias and web pages. In a study of use of CD-ROM databases by students, Schultz and Salomon (1990) found that 83% of students surveyed found it easy to use CD-ROM because it saved their time while two third of those surveyed reported that if the CD-ROM services was busy or unavailable they could wait for it to be free rather than use the print tool.

Another survey by Biddiscombe (1996) reported that 79% of those surveyed were happy with search results obtained from use of networks but cautioned that "today's students may be more sophisticated than their predecessors in using some of the basic functions of many systems, however, many are clearly unaware of the limitations and use of many electronic sources of information." Biddiscombe observed the emerging trend of "over reliance upon electronic information resources at the expense of the more traditional forms of information" adding that it was "essential for students to be aware that electronic resources and print resources complement each other." He reported that the areas of use of e-resources vary across subject areas, but noted that "100% of respondents studying computer studies used both CD-ROM's and the Internet" because the subject teachers emphasized use of these technologies. The report indicated that 47.6% of the students studying education used the Internet. The CD-ROM usage by law students was 38.8% compared with other courses that were much higher. The uses of electronic information resources vary across disciplines.

2.7 Challenges of Utilization of Print and Electronic Information Resources and Services in University Libraries

The use of printed and electronic information resources and services present some obvious challenges. One of the first major challenges to electronic information resources was long time preservation. Academic libraries are noted for accumulation and long time preservation of information resources. Marcum and Friedlander (2003) raised serious concern on long-term preservation question which "represented an early barrier to the acceptance of electronic journals as a form of publication equivalent to print" and because of this some publishers initially provided free electronic version as add-ons and not as equivalent or in "parallel with print formats." It was common to find CD versions of the printed copy. The authors emphasized that libraries were well known for preservation of valuable print information resources and "if libraries become gate keepers, aggregators, editors, and consultants to researchers, leasing rather than purchasing the resources researchers need, who will ensure ongoing access to those resources?." Who will preserve them as part of human culture?" Libraries were able to preserve print information materials successfully through collections in libraries and by individuals.

An evolving challenge to print resources as observed by Clifford (1997) resulted from the growing availability of online full-text electronic information resources which is creating 'a kind of second-rate in a sense, not because their quality is low, but just because people will prefer the accessibility of things they can get right away.' The import of this is the willingness to consult an information source and its acceptance depending on ease of use.

The choice of publishing medium and publishing industry was also affected by this apathy. Campbell (2006) noted that academic monographic publishers were slow in adopting digital

publishing technology, but pressure for change induced by 'economic model for paper publishing and distribution has began to falter' in response to users' preferences.

Electronic preservation also had its own associated challenges. Mitchell (n.d.) noted that "even in extreme circumstance, high quality paper lasts 10 times longer than the best magnetic media used for commercial and scientific data storage." Mitchell further reported that optic media (CD-ROM, DVD-ROM) are not durable because the "longest warranty in the industry for CD-ROM products only guarantees for 25 years." This was despite its being acclaimed good for storage backup. DVD has a higher storage capacity but shorter lifespan because increase in data density has been proven to be associated with shorter lifespan" while the lifespan for paper ranges between 50 to 100 years. Similarly, Oyewusi and Oyeboade (2009) noted that "electronic storage media degrade, just as paper does and perhaps more quickly; adding that "signals stored on electronic media also degrade and not at consistent rate, and hardware and software becomes obsolete." Other digital storage media such as "discs, tapes and other electronic media like print must be maintained in controlled environments; but may take more labour than print to preserve." As a possible solution to this, Mitchell (n.d.) identified two major possible challenges any library seeking to keep digital media for long term data storage should embrace; either to copy such data to any latest devices available or purchase the latest programme for uploading data on the obsolete format to the latest format.

Several studies have been conducted on challenges of deployment, maintenance of electronic resources, services and use. Gbaje (2007) identified some of the challenges faced by 10 Nigerian universities such as; lack of web technology skills by staff, 9(90%); lack of funds, 7(70%); lack of infrastructure (Internet access, electricity, web server), 8(80%); and limited

network, bandwidth/slow transmission, 8(80%). He emphasized that as libraries move to digital environment, creation of online instructions and tutorials, social networking sites and "how to convey the value of complementary nature of the physical and online services to support the teaching and instruction mission" presented another form of challenge.

Another challenge is information overload as noted by Gbaje (2007) that academic libraries emerged "from not being able to get enough information to not being able to identify and retrieve reliable and accurate information from the volumes of information available in digital form" and "as patrons continue to make greater use of the Internet, librarians now use websites/portals as means to facilitate access to Internet and other digital resources.". Adeniran (2013) also reported that the challenges of using e-resources included retrieval of "large mass of irrelevant information, the need to filter results from search, download delay, failure to find information, inadequate or lack of search skills, high cost of access". Lippincott (2008) opined that the daunting challenges facing librarians and academic library services in digital age calls for proactive choice of what librarians can offer in the new information environment.

Adeniran (2013) conducted a research on the usage of electronic resources by undergraduate students of Redeemer's University, Nigeria and her findings showed that students were aware of electronic resources like Internet, Online, CD-ROM, OPAC and E-journals. The purposes of using electronic resources included research, current awareness, information, assignment, e-mail and news. She also found out that fewer respondents indicated that they faced challenges in using electronic resources. Generally, most of the respondents expressed that they had no challenges in using electronic resources except in the area of technicalities.

Academic, College and Research Libraries (ACRL) (2008) noted that the growth of smart phones, e-books, iPods', and other handheld devices will drive user demands and expectations in digital age. EDUCAUSE Center for Applied Research (ECAR) (2008) conducted a study on undergraduate students and information technology and found that 51.2% of respondents owned Internet capable handheld devices. The report indicated that students "wanted to use their institutions e-mail service, administrative devices and course management system from their handheld devices." It was also noted that 14.8% of the students indicated they wanted to use library services from their devices. The report also predicted that the figure of those that use mobile devices was likely to grow fast "as vendors offered mobile interfaces to electronic resources, mobile application for OPACs increases and libraries offer reference services via text messaging and mobile interfaces to their own digital collections." The report suggested that librarians should take "proactive role in educating faculty staff and students on scholarly communication and 'authors' rights and open access options to recruit content for institutional repositories." The report emphasized that social networking tools are among some of the emerging change services and required skills that will attract patrons to online services. The report noted the new trends in electronic resources development which encouraged the use of "open source products and creation of more locally oriented digital collections" and "the increasing complexity of licensing issues and litigation involving the use of materials reinforces the need for academic libraries to provide value-added intellectual property service." These factors fundamentally affected the academic library's ability to provide digital or electronic information resources which were not serious problems with printed information resources. Wan Dollah and Singh (n.d.) identified some of the challenges of providing information in digital environment to include

"building the resources and library staff training to fulfill the need of users in the information age."

In Nigeria, Oyewusi and Oyeboade (2009) reported that academic libraries face problems of "ever increasing population growth, inadequate library facilities, resources and insufficient funding." This means the deployment of print and electronic resources present serious challenges. Omolayole (2002) also identified three factors that could hinder use of ICT in Nigerian academic libraries which include low level of computer culture, poor telecommunications infrastructure and general lack of awareness. Also fundamental to ICT project in libraries is the absence of or inadequate skilled librarians with experience to provide ICT services. Youngman (1999) as cited in Haliso (2011) studied the staff consideration in ICT application in the library of Kansas State University and found that human resources are essential for success of library services. Chisenga (2004) in a survey of use of ICT in public libraries of ten Anglophone countries of Africa identified some of the challenges as lack of adequate ICT personnel and funds while Nigeria was the only country that was noted for problem of power supply. In another study, Okiy (2005) also cited in Haliso (2011) noted the challenges of poor and inadequate telecommunication facilities, poor level of computer literacy, poor level of computer facilities and awareness of Internet facilities. The Report of Mortensen Center for International Library Programme at Illinois Urbana-Champaign (2005) noted lack of government funding, limited and expensive Internet, bandwidth, unstable power sources and insufficient staff development as obstacles to the deployment of e-resources in academic libraries

The printed and electronic information resources also have their positive and negative issues that libraries must learn to cope with. The printed texts lifespan may last up to centuries

depending on paper quality and storage conditions. It should be noted that once print information materials are acquired, they become permanent property of the library which gives it perpetuity right of access and use while this is not the case with electronic resources. The e-resources remain accessible and usable only on subscription and payment. The web based resources are sometimes removed without the consent of users which is detrimental to library's preservation and accessibility. Use of books are covered by copyright law which allows it to be used for any purpose – reserve, classroom, research, interlibrary loan while use of licensed database is covered by contract terms. There is no problem of termination of copy right on printed material or affect already purchased print copy while in the case of e-resources it could hinder access to both old and updates.

The content of book is archived once printed because it remains fixed and unchangeable which makes it self-preserving. The process of publishing – manuscripts, editing, vetting, publishing, and distribution also makes printing expensive. There is 'assurance that some evaluation of the resources worth has already been done by publisher and library selection process- thus guarantying the value and quality of books on one side but escalating the cost of book production on the other. This is not the case with many e-resources that are not subjected to this type of processing or only small percentage is peer reviewed.

Another challenge of electronic information resources use is the cost implication associated with access and use. Gbaje (2007) reported that out of the ten (10) Nigerian Universities surveyed, (8:80%) offered fee based Internet access while only (2:20%) was accessible free. This is another dimension to academic library services, since most of the services offered with print services at the moment are provided free. While it can be argued that storage of

printed materials and access do not attract fees because the initial cost of procurement is not passed or charged to the patrons, this cannot be said about e-library resources. In a digital environment, the technology of storage, physical access, and front end facilities like ISP cost gave rise to the need for electronic libraries to charges users to offset part of the cost implications. The challenge of dwindling finances for library resources and services which affected provision of adequate print information sources are still prevalent and may be more acute in e-resources environment.

Orenstein (n.d.) also posited that the challenge of the IT and electronic information delivery and services is how "to promote access to appropriate and accurate information to serve needs of users' who have established trust and faith with academic libraries." To this group of patrons, librarians are the "*glue that binds successful, efficient and excellent library services to the students, faculty and staff that require library information resources." Abubakar (2011) noted that this "offered academic libraries an exciting and challenging opportunities that require them to respond positively in all facets of their services and functions if they are to remain relevant in the 21st Century." Abubakar however noted that in the face of these daunting challenges, "most academic libraries in Nigeria are severely constrained by a number of factors that included erratic services, lack of hardware and software and in most instances the non-availability of the said ICTs in most academic libraries." These challenges are enormous and it requires serious intervention beyond the level of libraries that are statutorily responsible for provisions of print and electronic information resources and services. The library patrons' expect nothing short of good information resources and services which is the life wire of academic activities.

2.8 Summary of the Review

Hitherto, print information resources were the main and predominant information resources and services until 1970s when electronic information resources became prominent sources of information for academic purposes. The advent of electronic information resources, services and use was a great turning point and challenge to print resources, services and use. The first major challenge was the traditional definition of library as place, physical resources, services, location which were core in print information resources environment. This review also identified some of the print and electronic resources and services. It was also established that despite the call for electronic resources and services, print information resources still provide useful support to academic library users. It was also reported that some library patrons had more faith in information services from the institution's library even if they were in electronic format. It was also argued that electronic information resources cannot replace print information resources and services in academic libraries for sometimes to come.

It was noted that undergraduate students made use of both print and electronic information resources. The review further observed that the deployment and provision of print and electronic information resources and services were faced with some challenges. The challenges included dwindling sources of funds to procure books, increase in students' enrollment, lack of skilled ICT personnel and stable power supply, cost of maintenance, preservation and rapid changes in technology and software among others. The library managers were advised to take active role in the training, marketing and expansion of access; such as building of ICT infrastructure, provision of remote access, establishment of library websites, web OPAC and development of library commons to carter for all the users' interests.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is discussed under the following sub-headings:

3.1 Introduction

3.2 Research Method Adopted for the Study

3.3 Population for the Study

3.4 Sample and Sampling Procedure

3.5 Instrument for Data Collection

3.6 Procedure for Data Collection

3.7 Procedure for Data Analysis

3.2 Research Method Adopted for the Study

This study adopted survey method of research. According to Sambo (2005), survey research method is used to find out the attitude, opinion or preference of a given sample population from which 'a statistic is calculated from the data, and the statistic is used to estimate the true value (parameter) in the population.' Most often the survey research method does not permit the use of the entire population because of cost, accessibility, nature of questions, nature of the group to whom answer is addressed and convenience of subjects (Afolabi, 1998). Brehob (2001) also stated that 'survey research is a technique for gathering information from a large number of users.' The instrument for data collection was questionnaire. Gyuse (2005) opined that questionnaires are easy for analyses as

questions indicate method of analysis and cost effective where large population is involved.

3.3 Population of the Study

The university libraries of Federal University of Technology Minna (FUTM) and Ibrahim Badamasi Babangida University Lapai (IBBUL) and the undergraduate students users of these two institutions constitute the population of this study. The Federal University of Technology Minna uses the nomenclature 'School' to represent major academic divisions while Ibrahim Badamasi Babangida University Lapai uses 'Faculty' to represent its major academic divisions. The population of this study is given in Table 3:1.

Table 3.1: Population of Study

INSTITUTION	FACULTY/SCHOOL	DEPARTMENT	POPULATION
FUT Minna	SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY	1. Agriculture Economics &Extension Technology	254
		2. Animal Production Technology	173
		3. Crop Production	138
		4. Food Science & Nutrition	215
		5. Horticulture	38
		6. Soil Science	167
		7. Water Resources, Aquaculture & Fisheries Technology	141
		School Total	**1126**
	SCHOOL OF ENGINEERING AND ENGINEERING	DEPARTMENT	POPULATION

	TECHNOLOGY		
		1. Agriculture & Bioresources Engineering 2. Chemical Engineering 3. Civil Engineering 4. Electrical/Electronic Engineering 5. Mechanical Engineering	321 561 501 636 489
		School Total	**2508**
	SCHOOL OF ENVIRONMENTAL TECHNOLOGY	DEPARTMENT	POPULATION
		1. Architecture 2. Estate Management & Evaluation 3. Quantity Surveying 4. Surveying & Geoinformatics 5. Urban & Regional Planning 6. Building Technology	274 362 389 336 427 329
		School Total	**2117**
	SCHOOL OF ENVIRONMENTAL AND MANAGEMENT TECHNOLOGY	DEPARTMENT	POPULATION
		1. Entrepreneurship & Business Studies 2. Project Management	238 159

		3. Transport Management	107
		School Total	**504**
	SCHOOL OF NATURAL AND APLIED SCIENCES	DEPARTMENT	POPULATION
		1. Biochemistry 2. Biological Sciences 3. Chemistry 4. Geology 5. Geography 6. Mathematics/Statistics 7. Microbiology 8. Physics	304 280 315 396 471 533 316 467
		School Total	**3082**
	SCHOOL OF INFORMATION AND COMMUNIATION TECHNOLOGY	DEPARTMENT	POPULATION
		1. Information & Media Technology 2. Telecommunication Engineering 3. Computer Engineering 4. Computer Science 5. Cyber Security Science	149 115 137 207 153
		School Total	**761**
	SCHOOL OF TECHNOLOGY EDUCATION	DEPARTMENT	POPULATION

		1. Library Information Technology 2. Science Education 3. Industrial Technology Education	280 467 405
		School Total	**1152**
		Institutional Grand Total	**11,250**
IBBU Lapai	**FACULTY**	**DEPARTMENT**	**POPULATION**
	AGRICULTURE	1. Agriculture	157
		Faculty Total	**157**
	NATURAL SCIENCES	DEPARTMENT	POPULATION
		1. Biochemistry 2. Biology 3. Chemistry 4. Computer Science 5. Geography 6. Mathematics 7. Microbiology 8. Physics	189 262 145 263 233 218 145 153
		Faculty Total	**1608**
	APPLIED SCIENCES AND TECHNOLOGY	DEPARTMENT	POPULATION
		1. Geology 2. Food Science & Technology	55 13
		Faculty Total	**68**

	EDUCATION AND ARTS	DEPARTMENT	POPULATION
		1. Adult Education	304
		2. Counseling Psychology	397
		3. History & International Studies	178
		4. Science Education	29
		5. Sports Science & Health Education	113
		Faculty Total	**717**
	LANGUAGES AND COMMUNICATION	DEPARTMENT	POPULATION
		1. Arabic	137
		2. English	150
		3. French	13
		4. Mass Communication	303
		Faculty Total	**603**
	MANAGEMENT AND SOCIAL SCIENCES	DEPARTMENT	POPULATION
		1. Business Administration	403
		2. Economics	375
		3. Political Science	311
		4. Public Administration	346
		5. Sociology	313
		Faculty Total	**1748**
		Institutional Grand Total	**5,205**

Sources: Information &Technology Services, FUT Minna and Academic Office, IBBU Lapai.

The summary of population for the two institutions shows that FUT Minna had a population of 11,250 students and IBBU Lapai had 5,205 students. The grand total of the population of the two institutions is 16,455.

3.4 Sample and Sampling Procedure

This study sampled one percent of the grand total of the undergraduate students of the two institutions which is 165. The sample consisted of 113 undergraduate student users of Muhammad Awwal Ibrahim and Ibrahim Badamasi Babangida Libraries of Federal University of Technology Minna and 52 undergraduate student users of Abubakar Gimba Library, Ibrahim Badamasi Babangida University Lapai. This is represented in table 3.2 sample size for FUT Minna and IBBU Lapai.

Table 3.2: Sample size of FUT Minna and IBBU Lapai

Institution	Faculty/School	Department	Sample
FUT Minna	SCHOOL OF AGRICUTURE AND AGRICULTRAL TECHNOOGY	1. Agriculture Economics & Extension Technology	3
		2. Animal Production Technology	2
		3. Crop Production	1
		4. Food Science & Nutrition	2
		5. Horticulture	0
		6. Soil Science	2
		7. Water Resources, Aquaculture & Fisheries Technology	1
		School Total	**11**
	SCHOOL OF ENGINEERING AND ENGINEERING	1. Agriculture & Bioresources Engineering	3

	TECHNOLOGY	2. Chemical Engineering 3. Civil Engineering 4. Electrical/Electronic Engineering 5. Mechanical Engineering	6 5 6 5
		School Total	**25**
	SCHOOL OF ENVIRONMENTAL TECHNOLOGY	1. Architecture 2. Estate Management & Evaluation 3. Quantity Surveying 4. Surveying & Geoinformatics 5. Urban & Regional Planning 6. Building Technology	3 4 4 3 4 3
		School Total	**21**
	SCHOOL OF ENVIRONMENTAL AND MANAGEMENT TECHNOLOGY	1. Entrepreneurship & Business Studies 2. Project Management 3. Transport Management	2 2 1
		School Total	**5**
	SCHOOL OF NATURAL AND APPLIED SCIENCES	1. Biochemistry 2. Biological Sciences 3. Chemistry 4. Geology 5. Geography 6. Mathematics/Statistics 7. Microbiology 8. Physics	3 3 3 4 5 5 3 5
		SCHOOL TOTAL	**31**

	SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY	1. Information & Media Technology 2. Telecommunication Engineering 3. Computer Engineering 4. Computer Science 5. Cyber Security Science	2 1 1 2 2
		School Total	**8**
	SCHOOL OF TECHNOLOGY EDUCATION	1. Library Information Technology 2. Science Education 3. Industrial Technology Education	3 5 4
		School Total	**12**
		Institutional Grand Total	**113**
IBBU LAPAI	**FACULTY**	**DEPARTMENT**	
	AGRICULTURE	1. Agriculture	2
		Faculty Total	**2**
	NATURAL SCIENCES	1. Biochemistry 2. Biology 3. Chemistry 4. Computer Science 5. Geography 6. Mathematics 7. Microbiology 8. Physics	2 3 2 3 2 2 2 2
		Faculty Total	**16**
	APPLIED SCIENCES	1. Geology	1 0

	&TECHNOLOGY	2. Food Science & Technology	
		Faculty Total	**1**
	EDUCATION & ARTS	1. Adult Education 2. Counseling Psychology 3. History & International Studies 4. Science Education 5. Sports Science & Health Education	3 4 2 0 1
		Faculty Total	**10**
	LANGUAGES & COMMUNICATION	1. Arabic 2. English 3. French 4. Mass Communication	1 1 1 3
		Faculty Total	**6**
	MANAGEMENT & SOCIAL SCIENCES	1. Business Administration 2. Economics 3. Political Science 4. Public Administration 5. Sociology	4 4 3 3 3
		Faculty Total	**17**
		Institutional Grand Total	**52**

From Table 3.2, the total sample size for the two institutions is 165. The determination of sample size is relative to the population and based on expert's advice. Osuala (2001) gave some of the factors that determine the adequacy of sample size namely:

a. Nature of population

b. Type of sampling design

c. Degree of precision desired; because the use of large sample size is considered a waste of resources.

The sample size for large population is often difficult to determine. These factors may have obvious effect on the research, however Aina and Ajiferuke (2002) opined that "with very large population, the size of the population is of little significance" and that "both the low and high values of the range of feasible sample sizes would constitute only very small proportion of the total", because of that "the statistical consequences of the difference between two proportions would be negligible". Uzoagu (1998) is of the opinion that due to the problem in determining sample size, some suggested percentage of population by experts should be chosen. One of such experts' suggestions was by Curry (1984) as cited by Yount (2006) who proposed the sample size popularly referred to as "rule of the thumb". The relative sample size per population suggested by Curry is presented in Table 3.3.

Table 3.3: Rule of the Thumb

Size of Population	Sampling Percentage
0-100	100%
101-1000	10%
1001-5000	5%
5001-10000	3%
10000+	1%

Source: Yount (2006) www.napce.org/documents/research-design.....

In a research involving a very large population, the sample size of 1% was used by Yount (2006) to sample 36,000 pastors in a research of Christian Ministries. One percent or 360 pastors were used based on expert advice and based on this; the sample size of 1% percent was adopted and used to generate data to carry out this research.

Sampling Procedure

The total students' enrollment (2012/2013 session) was used in the two institutions. The population of undergraduate students in each institution was obtained separately and one percent sample size was proportionately computed for each of the two institutions. The sample size for each institution was again proportionally computed according to faculties or schools respectively for Ibrahim Badamasi Babangida University, Lapai and Federal University of Technology, Minna. The population of schools and faculties were further computed to get the population of each department to determine the proportionate sample size and number of respondents by departments. This was done for each of the two universities according to schools/faculties and respective departments.

The choice of sampling technique depends on the characteristics and nature of the population. In this study, stratified random sampling technique was used for undergraduate students of the two university libraries. The population of this study is homogeneous but different in terms of institution and location. Each of the university's, School/Faculty and Departments were considered as stratum along with their corresponding undergraduate students. The main reason for using stratified sampling technique was to capture all segments of the subgroups to secure adequate and representative sample of such population in the study. Baba (2005) also stated that 'when stratified sampling is used, the population is broken into different segments/strata and selected from each segment/stratum proportionate to population size.' Random sampling technique was used to select

the respondents. Random sampling technique requires that the exact size or approximate population is known and every member has equal opportunity to be selected for the study. The lists of undergraduate students were obtained separately from the two universities according to their faculties/schools and departments with their admission numbers. The selection of respondents was done by mechanical means using balloting.

3.5 Instrument for Data Collection

This study used questionnaire as its instrument for data collection. A closed or structured questionnaire was designed and used for collection of data. A closed questionnaire normally contains clear information, guidelines and instructions for respondents. In addition, list of options were provided to enable respondents to choose from. It also allows respondents to be more focused and objective in their responses. The use of closed/structured questionnaire is also supported by Osuala (2001) that when more than 20 to 30 respondents are involved in a research, closed response format be used. Ndagi (1999) described closed or structured questionnaire as one that consists of prepared list of specific questions and a choice of answers which are easy to fill and also to keep the respondent's mind fixed to the subject.

The questionnaire is divided into five sections. Section A deals with the background information of respondents. Sections B, C, D and E were designed to address specific research questions. The respondents were provided with specific options to choose from or required to provide answers by filling in the spaces provided. The questionnaire contained a total of twelve questions. The last question was an open ended question which required respondents to suggest ways to improve print and electronic information resources and services for undergraduate student users of university libraries in Niger State.

Validity and Reliability

The questionnaire was designed by the researcher in conformity with Thurnstone Scale Response. Thurstone was one of the foremost productive scaling theorists. His scales were based on the assumption that the concept under investigation is unidirectional and involve the generation of scalable responses where respondents are expected to express their 'favorableness' to statements in question (Thurstone Scaling)**).** The instrument was also validated by some experts on face value and was pretested. The instrument was administered to ten respondents at the Federal Capital Territory College of Education, Zuba Abuja. The feedback enabled the researcher to modify some of the research questions. The questionnaire items that were unclear or ambiguous to the respondents were reframed. The instrument was revised and improved upon based on the observations from the results obtained from the pretest carried out with ten students from FCT College of Education, Zuba – Abuja.

Reliability of the Instrument

Another pilot study was again conducted in Ahmadu Bello University Zaria to determine the reliability of the instrument. Twenty (20) copies of the questionnaire were administered to undergraduate students. Olvera (2001) is of the view that pilot testing is usually done on a much smaller scale than the main study but under similar conditions To determine the reliability of the instrument, Guttmann Split half reliability using Spear Man Brown formulae was used. The reliability coefficient of 0.76 was obtained based on Cronbach alpha method. This clearly indicated that the instrument is reliable and consistent for the study.

3.6 Procedure for Data Collection

The questionnaire was meticulously administered through the coordinating research assistants (appointed among the library staff of each institution) and school representative or School/Faculty research assistant. The School/Faculty representatives also employed the services of Departmental representatives to facilitate access to Departments. The school/faculty representatives were properly instructed and guided on how to complete the questionnaire. The instrument for schools/faculties was coded according to institutions and school/faculty research assistants were instructed to ensure that they strictly adhered to it when administering the questionnaire to the respondents. For example respondents were only allowed to fill the instrument assigned or coded for their school/faculty and department respectively. The questionnaire were administered to undergraduate students and were given some time to complete and return them to the school/faculty research assistants. In some cases, the assistance of lecturers was sought during lectures which greatly facilitated quick response. The school/faculty research assistants collated all the completed questionnaire and then forwarded them to the coordinating research assistant in each institution. The researcher collected the completed questionnaire from the institutional research assistant for analysis and interpretation.

3.7 Procedure for Data Presentation and Analysis

The completed and returned questionnaire were sorted and collated according to the institutional libraries and those found usable for analysis and interpretation were identified. The responses were aggregated at the institutional type level for analysis and interpretation.

Descriptive statistics was used to analyze respondent's biodata information and the objectives of this study. Descriptive statistics involve the use of percentages, mean, median, mode, histogram and charts.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data collected, the result and discussion of findings of this study. These are presented under the following sub-headings:

4.2 Response rate and demographic analysis of the respondents

4.3 Descriptive analysis of Responses to Research Questions

4.2 Response Rate and Demographic Analysis of the Respondents

The response rate from the two universities revealed that 126 (76.36%) copies of the questionnaire were duly completed, returned and used for this analysis. A further detail of the response showed that 48(92.31%) and 78(69.03%) were completed and returned from IBBU, Lapai and FUT, Minna respectively. The high response rate recorded from IBBU, Lapai could be attributed to the small size of sample and high level of cooperation in administering the questionnaire and the assistance and support of lecturers during lectures. The level of cooperation was much to the extent that some respondents willingly volunteered to complete the questionnaire on the spot. This level of cooperation was achieved probably because students had just resumed and were not yet seriously occupied with academic activities then. In the case of FUT Minna, students were busy preparing for their semester examinations; others were writing examinations while some of the final year students had finished their examinations. This might be responsible for the lack of enthusiasm by some students to spare time to complete the questionnaire. It took a lot of efforts and persuasion by the researcher and the assistants to get some of the respondents to cooperate.

4.2.1 Gender of Respondents

Gender was not a variable in this research, but it provided insight into the gender participation in this study. The respondents were made up of male and female undergraduate students. The distribution of respondents by gender is presented in Table 4.1.

Table 4.1: **Gender of Respondents**

Gender	Frequency	Percentage (%)
Male	93	73.81
Female	33	26.19
Total	**126**	**100**

Table 4.1 shows that there were more male participants than female respondents. This may be attributed to the level of cooperation received from the respondents at the time of administering the questionnaire or mare coincidence since the participants were randomly selected.

4.2.2 Academic Level of Respondents

Table 4.2: Academic Level of Respondents

Level	Frequency	Percentage (%)
200	25	19.84
300	51	40.48
400	50	39.68
Total	**126**	**100**

It can be observed from Table 4.2 that the responses were higher for 300 and 400 level undergraduate students. This may probably be because they had spent longer time in the institutions and more familiar with the available information resources and services. In view of this they could easily provide answers to the questions. The researcher observed that when a respondent was presented with the questionnaire and after taking some time to peruse it, if he or she found it difficult to provide the required answers, he or she simply declined or apologized for not having much idea about the information required. Such students apologized to the researcher

and walked away. The other possibility might be that the student could not spare time to complete the questionnaire and may give any excuse to evade answering the questions.

4.3 Descriptive Analysis of Responses to Research Questions

This section analyzes and discusses the data collected for the purpose of providing answers to the research questions. In this analysis and discussions, tables and bar charts were used to illustrate some of the data for the purpose of clarity and easy comprehension.

4.3.1 Print and Electronic Information Resources Available in the University Libraries for Undergraduate Students Use.

One of the things this study set out to investigate is the available print and electronic information resources in the university libraries for undergraduate students use. Lists of print and electronic information resources were provided for respondents to tick as many as were available in their university libraries. They were allowed to make multiple ticking of the print and electronic information resources that were provided and available in their university libraries. The responses are given in Table 4.3 and Table 4.4 and also illustrated in Figure 4.1 and Figure 4.2.

Table 4.3: Print Information Resources Available in the University Libraries for Undergraduate Students Use

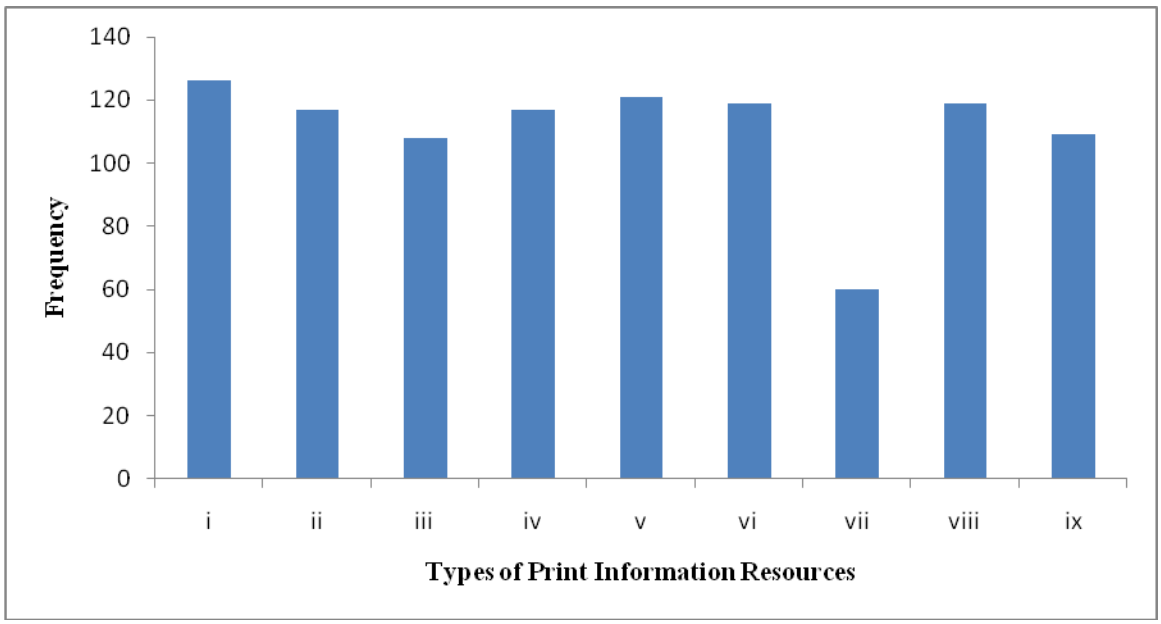
Printing Information Resources	Frequency*	Percentage (%)
Text books	126	100.00
Reference books	117	92.86
Journals	108	85.71
Newspapers	117	92.86
Dictionaries	121	96.03
Encyclopedias	119	94.44
Directories	60	47.62
Maps	119	94.44
Atlases	109	86.51

*Multiple responses were allowed

Table 4.4: Electronic Information Resources Available in the University Libraries for Undergraduate Students Use

Electronic Information Resource	Frequency*	Percentage (%)
Computers**	126	100.00
Databases	17	13.49
e-journals	12	9.52
e-newspapers	21	16.67
CD-ROM	7	5.56
Internet Access**	126	100.00
Wireless Internet**	84	66.67
Library portal	0	0.00
Dedicated library websites	0	0.00

*Multiple responses were allowed **Platform for Internet access and not resources

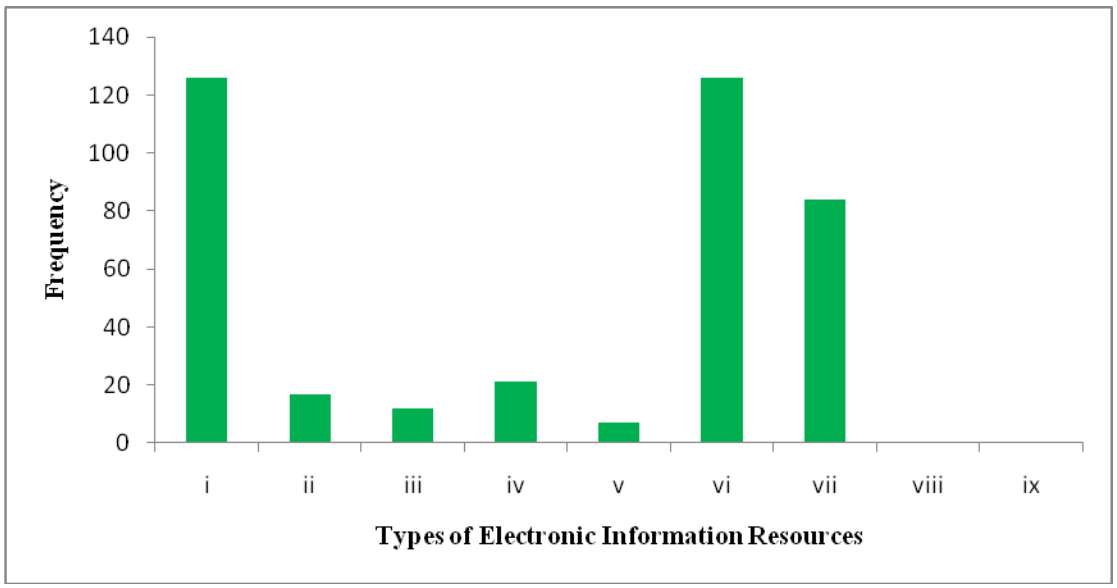


Key

i. Text books	ii. Reference books	iii. Journals	iv. Newspapers v. Dictionaries
iv. Encyclopedias	vi. Directories	vii. Maps	viii. Atlases

Figure 4.1: Print Information Resources Available in the University Libraries for use by Undergraduate Students

The available electronic information resources in the universities libraries for undergraduate students use is also graphically presented in figure 4.2



Key

i. Computer** ii. Databases iii. e-journals iv. e-newspapers v. CD-ROM
vi. Internet Access** vii. Wireless Internet** viii. Library portal ix. Dedicated library websites

Figure 4. 2: Electronic Information Resources Available in the University Libraries for Use by Undergraduate Students

Note: Items nos: i, vi and vii marked with double asterisk (**) are platform for Internet access and not resources

From Table 4.3 and Figure 4.1, it can be observed that a high percentage of responses indicated that print information resources were more available for undergraduate students' use in the university libraries. This is supported by 126(100%) responses for textbooks, 121(96.03%) for dictionaries and 119(94.44%) for encyclopedias and atlases. This finding is also in consonance with Popoola and Haliso (2009) report that printed information materials are important information resources and still utilized by undergraduate students. Table 4.3 and Figure 4.1 also show that newspapers and reference books recorded 117(92.86%) responses each. From this table and figure, directories recorded the lowest frequency of 60(47.62%) responses. The remaining print information resources recorded frequency of 108(85.71%) responses and above. The low rating for directories may be attributed to lesser use among undergraduate students. The finding of

this study on use of electronic information resources does not support the view of Agaba (2005), who sees the emergence of electronic information resources as "shift" from print information resources, rather it agrees with OCLC (2005) that they only complement each other and that both print and electronic services should be provided in university libraries for undergraduate students use.

Table 4.4 and Figure 4.2 represent the responses to electronic information resources which were generally low compared with responses to print information resources. This can be seen from the frequencies to electronic resources such as databases 17(13.49%), e-journals 12(9.52%) and CR-ROM 7(5.56%). However, respondents rated the availability of access platforms such as computers and Internet access and wireless Internet very high as indicated by 126(100.0%), 126(100%) and 84(66.67%) respectively. It can be observed from Table 4.4 and Figure 4.2 that library portal and dedicated library website recorded zero responses. The responses also indicated that electronic access platforms were provided but many of the electronic information resources listed were not available. This shows that the university libraries did not provide electronic information resources. The university libraries provided computers and Internet access without providing customized or aggregating electronic resources and services like creating links to web based electronic resources, databases and other electronic libraries services for undergraduate student users. The undergraduate students rated the availability of computers, wireless Internet and Internet access very high.

A cursory look at the graphical presentation of print information resources (Table 4.3) and Figure 4.1 and electronic information resources (Table 4.4) and Figure 4.2 give a comparative picture of the available print and electronic information resources in university libraries for

undergraduate students use. It is crystal clear that majority of information resources available for undergraduate students use were predominantly print information resources. All the print information resources recorded very high responses except directories while all the responses for electronic information resources were very low.

4.3.2 Print and Electronic Information Services Provided in University Libraries for Undergraduate Students Use in Niger State.

This study also intended to find out the print and electronic information services provided for undergraduate students in these university libraries. The respondents were allowed to tick as many services as were available from the list given for print information services in Table 4.5 and electronic information services in Table 4.6. The illustration of Table 4.5 and 4.6 are given by figure 4.3 and figure 4.4 respectively.

Table 4.5: Types of Print Information Services Available in the University Libraries for Undergraduate Students Use in Niger State

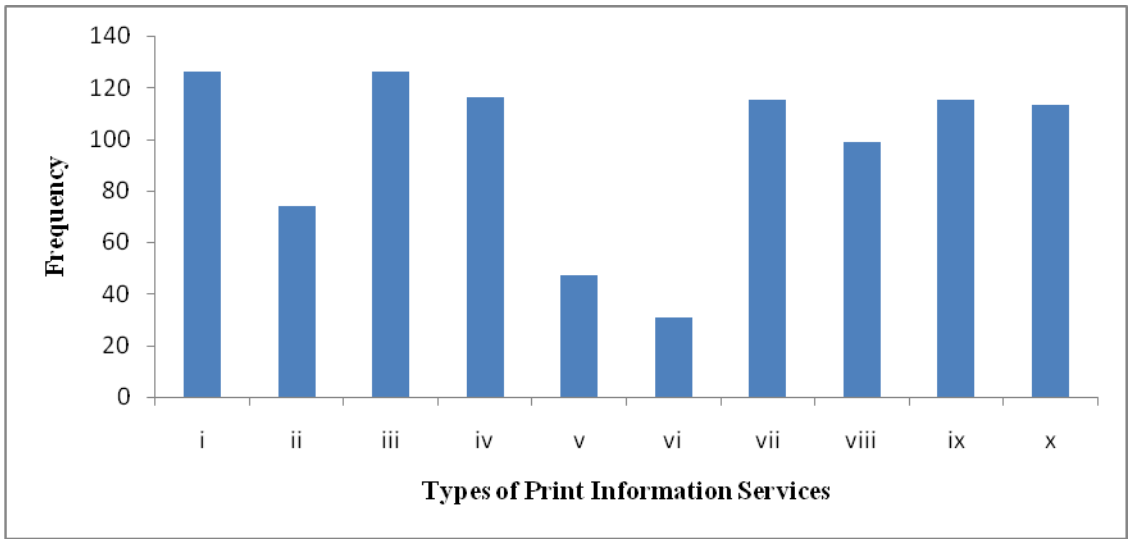
Types of Print Information Services	Frequency*	Percentage(%)
Book borrowing	126	100
Book reservation	74	58.73
Books/journals consultation	126	100
Reference services	116	92.06
Referral services	47	37.30
Interlibrary loan	31	24.60
Public catalogue access	115	91.27
Bindery services	99	78.57
Photocopy services	115	91.27
Library instruction	113	89.68

*Multiple responses were allowed

Table 4.6: Types of Electronic Information Services Available in the University Libraries for Undergraduate Students Use in Niger State

Types of Electronic Information Services	Frequency*	Percentage (%)
Internet Access	119	94.44
OPAC	9	7.14
Databases search	29	23.02
e-books	108	85.71
e-journal	41	32.54
Online reference service	0	0.00
Online training	3	2.38
Online reserve	0	0.00
Downloading documents	106	84.13
Printing documents	106	84.13
Online enquiry	10	7.94
Wireless access to e-library	67	53.17
Scanning documents	73	57.94

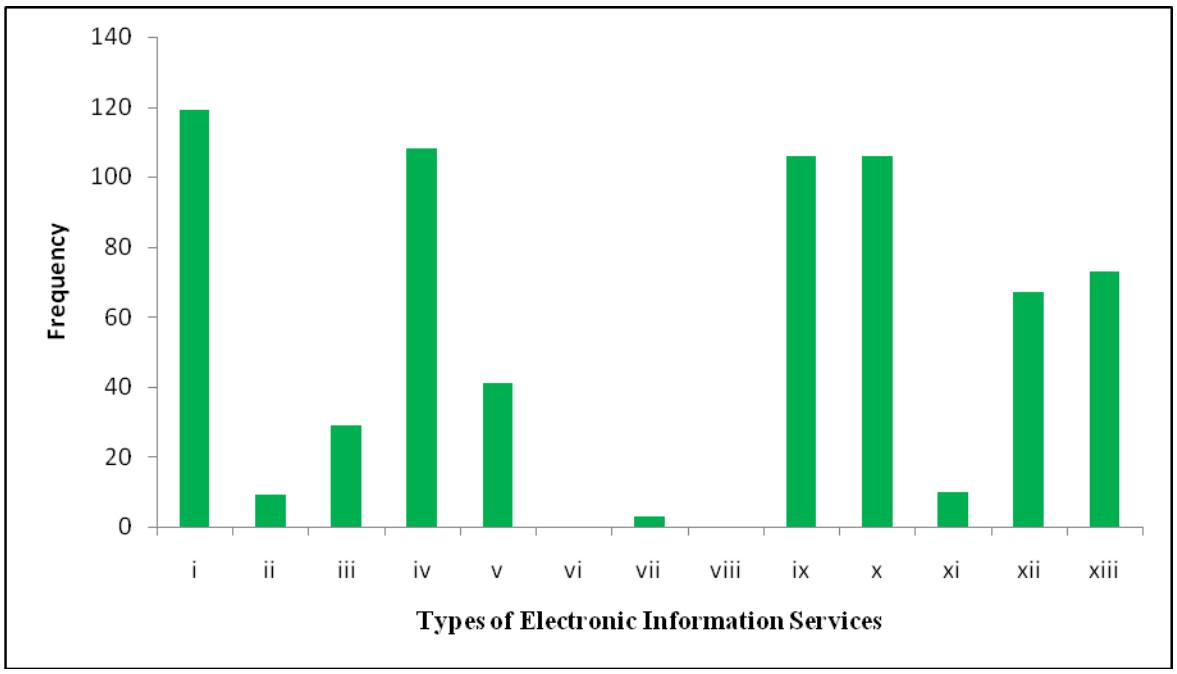
*Multiple responses were allowed



Key

i Book borrowing ii Book reservation iii Books/journals etc consultation
iv Reference services v Referral services vi Interlibrary loan vii Public catalogue access
viii Bindery services ix Photocopy services x Library instruction

Figure 4.3: Types of Print Information Services Available in the University Libraries for Undergraduate Students Use in Niger State



Key:

i. Internet Access ii. OPAC iii. Databases search iv. e-books v. e-journals
vi. Online reference service vii. Online training viii. Online reserve
ix. Downloading documents x. Printing documents xi. Online enquiry
xii. Wireless access to e-library xiii. Scanning documents

Figure 4.4: **Types of Electronic Information Services Available in the University Libraries for Undergraduate Students Use in Niger State**

The analysis of print information services from Table 4.5 and Figure 4.3 shows that, book borrowing and book consultation recorded the highest responses of 126(100%) each. This was followed by reference services, public catalogue and photocopy services which recorded 116(92.06%) responses each while library instruction was also given high priority as indicated by 113(89.68%) of respondents. This finding also agrees with Agboola (2000) who also found out that lending and photocopying services were among the most available print services in academic libraries. Interlibrary loan and referral services attracted 31(29.60%) and 47(37.30%) responses respectively as shown in Table 4.5 and Figure 4.3. There is a correlation between the availability

of print information resources (Table 4. 3) and print information services (Table 4.5). This means that since there are more print information resources, it is only logical that there would be more print information services.

The analysis of electronic information services in Table 4.6 revealed that there is a very low provision of electronic information services in the university libraries. However, the availability of computers, Internet access and wireless Internet provided the platform for accessing online electronic information services. The result of analysis in Table 4.5 also graphically illustrated by Figure 4.4 shows a significant rating for e-books with 108(85.71%) responses while downloading of documents and printing documents recorded responses of 106(84.13%) each. In this analysis, there is also a correlation between the availability of access platforms (computers, Internet access and wireless Internet) in the university libraries and the online electronic information services accessed from the university libraries as can be observed in Table 4.5 and Figure 4.4. The respondents expressed satisfaction with wireless access to e-books of 67(53.17%).

It can also be observed that the responses for electronic information services were generally lower than the print information resources and services provided in the university libraries for undergraduate students' use. This also means more print information services are provided in the university libraries for undergraduate students' use. It can also be deduced from Tables 4.5 and Figure 4.4 that downloading and printing were from general Internet access and not from library portal or dedicated websites or any value added services provided by the university libraries. The e-books and wireless access were from the online Internet access and not from e-library services provided by the university libraries. This means that undergraduate students regarded everything that was accessed from the Internet from computers and Internet services

from the university libraries as e-library books provided by their university libraries. The respondents could not differentiate between what they obtained from the general Internet access from customized library packaged electronic information resources and services.

4.3.3 Level of Satisfaction with Utilization of Print and Electronic Information Services

The study went further to find out the extent of satisfaction with the utilization of print and electronic information services provided for undergraduate students in Abubakar Gimba Library in IBBU, Lapai and Ibrahim Badamasi and Muhammad Awwal Ibrahim Libraries in FUT, Minna. This data is presented in Table 4.7 for print information services and Table 4.8 for electronic information services.

Table 4.7: Level of Satisfaction with Utilization of Print Information Services in the University Libraries

Types of Print Information Services	Satisfied	Undecided	Not Satisfied
Book borrowing	111(88.10)	13(10.32)	2(1.59)
Book reservation	60(47.62)	49(38.89)	16(12.70)
Books/journals consultation	75(59.52)	13(10.32)	8(6.35)
Reference services	78(61.90)	39(30.95)	9(7.14)
Referral services	38(30.16)	63(50.00)	13(10.32)
Interlibrary loan	43(34.13)	67(53.17)	16(12.70)
Public catalogue access	112(88.89)	Nil	14(11.11)
Bindery services	99(78.57)	16(12.70)	11(8.73)
Photocopy services	80(63.49)	20(15.87)	17(13.49)
Library instruction	73(57.94)	16(12.70)	33(26.19)

Figures in parentheses are percentages

Table: 4.8 Level of Satisfaction with Utilization of Electronic Information Services in the University Libraries

Types of Electronic Information Services	Satisfied	Undecided	Not Satisfied
Types of electronic Information			
Internet Access	96(76.19)	3(2.38)	19(15.08)
OPAC	6(4.76)	46(36.51)	74(58.73)
Databases search	3(2.38)	3(2.38)	42(33.33)
e-books	67(53.17)	21(16.67)	12(9.52)
e-journal	32(25.40)	35(27.78)	29(23.02)
Online reference service	33(26.19)	13(10.32)	62(49.21)
Online training	22(17.46)	14(11.11)	41(32.54)
Online reserve	Nil	42(33.33)	5(3.97)
Downloading documents	87(69.05)	18(14.29)	21(16.67)
Printing documents	77(61.11)	9(7.14)	38(30.16)
Online enquiry	68(53.97)	21(16.67)	35(27.78)
Wireless access to e-library	13(10.32)	13(10.32)	99(78.57)
Scanning documents	72(57.14)	25(19.84)	19(15.08)

Figures in parentheses are percentages.

The analysis of print information services in Table 4.7 shows that public access catalogue and book borrowing were rated very highly as represented by 112(88.89%) and 111(88.10%) responses respectively and the responses indicated that respondents were satisfied with print services such as bindery services 99(78.57%), photocopy services 80(63.49%), reference services 78(61.90%) while library instruction and book reservation recorded responses of 73(57.94%) and 60(47.62%) respectively. The lowest rate for satisfaction with print services was recorded in inter-library loan and referral services. Inter-library loan recorded 43(34.13%) while referral services recorded the lowest responses of 38(30.16%). Print services recorded highest responses for "undecided", in interlibrary loan and referral services which were represented by scores of 67(53.17%) and 63(50.00%) respectively. On the scale of "Not satisfied" with some of the print services, the responses were generally low as can be observed from Table 4.5. Library instruction

recorded the highest responses of 33(26.19%) for “Not satisfied”. The overall analysis on Table 4.7 revealed that undergraduate students of FUT, Minna and IBBU, Lapai were satisfied with print information services provided by their university libraries. This finding is supported by report of Oyewusi and Oyeboade (2009), who found a high rate of utilization of print and electronic information resources among undergraduate students.

Table 4.8 presents the analysis of the extent of satisfaction with the utilization of electronic information services. From Table 4.8, the level of satisfaction with electronic information services showed that downloading of documents recorded 87(69.05%) responses, printing of documents 77(61.11%) responses, online enquiry 68(53.97%) responses and e-books 67(53.17%) responses. The remaining Internet services were scored low while online reserve recorded zero or no response. Also from Table 4.8, 46(36.51%) of respondents were “undecided” about their level of satisfaction with OPAC services provided_by their university libraries. Here again as observed earlier, the respondents could not differentiate access to Internet services and OPAC, a service that is usually provided by electronic libraries. In these two universities, the libraries did not have OPAC services. A glance at Table 4.8 shows that respondents were not satisfied with electronic information services as could be observed by responses to services like OPAC 74(58.73) and online reference service 62(49.21%). The table also revealed that respondents were not satisfied with other electronic information services such as database search 42(33.33%) and online training 41(32.54%).

4.4 Factors that Influence Choice of Information Resource (Print and Electronic)

To further enquire into the utilization of print and electronic information resources and services, respondents were asked about the factors that influence their choice of print and electronic information resource type and their responses are presented in Table 4.9.

Table 4.9: Factors that Influence Choice of Print and Electronic Information Resources Type

Factors	Frequency*	Percentage(%)
Fastness of Access	96	79.19
Ease of Access	56	44.44
Remote Access	37	29.37
Quality of Content	76	60.32
Currency	68	53.97

*Multiple responses were allowed

The responses show that fastness of access recorded 96(79.19%), followed by quality of content 76(60.32%) while currency and ease of access recorded 68(53.97%) and 56(44.44%) respectively.

4.5 Purposes of Information Resources Use

The researcher also intended to find out the purposes of using information resources by undergraduate students and responses are presented in Table 4.10.

Table 4.10: Purpose of Information Resources Use

Factors	Frequency*	Percentage (%)
Research	83	65.87
General Information	61	48.41
Assignment	126	100
E-mail	20	15.87
Current Affairs (News)	35	27.78
Prepare for Examination	98	77.78

*Multiple responses were allowed

The analysis on Table 4.10 show that the three topmost purposes for using information resources were assignment 126(100%), prepare for examination 98(77.78%) and research 83(65.87%). The three topmost uses were all related to undergraduate students' academic work. This may probably be attributable to the importance of personal research, conduct of assignments and passing of prescribed examinations as precondition for successful graduation from the university. The desire for general information also recorded a response of 61(48.41%) which is in consonance with the findings of Leelavathi and Doraswamy (n.d.) that undergraduate students use information resources for research and general information. This study found that undergraduate students use information resources for academic related purposes which also agreed with findings of Kattimani (2010) that students use information resources for projects and presentations. The remaining items on the list of purposes of using information resources were scored low which underscores the importance undergraduate students attached to things that are not directly related to their academic work (Table 4.10).

4.6 Challenges of Utilization of Print and Electronic Information Resources

This study also intended to find out some of the hindrances or challenges that undergraduate students of IBBU, Lapai and FUT, Minna encounter in the course of using print and electronic information resources provided in their university libraries. Lists of possible challenges were provided for respondents to choose from, and they were also allowed to make multiple choices. The responses are analyzed and presented in Table 4.11 and Table 4.12.

Table 4.11: Challenges of Utilization of Print Information Resources by Undergraduate Students in University Libraries in Niger State

Hindrances/Challenges	Frequency*	Percentage (%)
Lack of Awareness of Available Resources	86	68.25
Obsolete Books	73	57.94
Un-conducive environment for reading	7	5.56
Overcrowding	15	11.90
Excessive control/ library rules	9	7.14
Inconvenient opening hour	25	19.84
Inadequate relevant books	70	55.56
Residence too far from library	21	16.67

*Multiple responses were allowed

Table 4.12: Challenges of Utilization of Electronic Information Resources by Undergraduate Students in University Libraries in Niger State

Types of Electronic Information Services	Frequency*	Percentage (%)
Lack of awareness of available resources	84	66.67
Lack of computer knowledge/skills	32	25.40
Inadequate computer systems	43	34.13
Very slow network	63	50.00
High cost of Internet Access	18	14.29
Constant power failure	60	47.62
Unstable Internet connectivity	93	73.02

*Multiple responses were allowed

The top three challenges of print information resources utilization that can be observed from the responses of undergraduate students' users of the university libraries as indicated in Table 4.11 include lack of awareness of available print resources, obsolete books and lack of relevant books. From Table 4.11, lack of awareness of available print resources recorded 86(68.25%) responses, obsolete books 73(57.94%) responses and inadequate relevant books recorded 70(55.56%) responses. However, this lack of awareness of available print information resources is not in congruent with the high responses recorded for library instruction in Table 4.5.

The possible explanation could be that the respondents did not understand what they were taught and could not apply the skills that they were expected to have acquired from the programme. Another possible explanation could be that, library staff did not do a follow-up point of use assistance to the respondents and undergraduate students could not effectively apply the skills of library instruction. The responses also indicated that library books were obsolete (Table 4.11) and this might explain the reason why the respondents indicated that the books were not relevant (Table 4.8).

In terms of challenges faced by undergraduate students when using electronic information resources (Table 4.12), the most critical challenges include unstable Internet connectivity which recorded 93(93.02%) responses, lack of awareness of available electronic services was scored 84(66.67%), very slow network recorded 63(50.00%) responses and constant power failure was scored 60(47.62%). Other challenges that could be observed in Table 4.8 include inadequate computer systems and lack of computer knowledge/skills as represented by 43(34.13%) and 32(25.40%) respectively. These challenges were glaring because of the high patronage of computers and Internet access as reported in Table 4.4. The challenges of poor and inadequate Internet facilities in this study also agrees with findings of Haliso (2011) and report of Urbana Champaign (2004) on the impact of slow bandwidth and unstable power supply on the provision of Internet services in university libraries.

4.7 Suggestions for Improvement in Information Resources and Services in University Libraries in Niger State

The last item in the questionnaire for data collection was an open question that required respondents to suggest measures that could bring about improvement in the utilization of print and

electronic information resources and services by undergraduate students in the university libraries in Niger State. The summary of suggestions is presented in Table 4.13.

Table 4.13: Summary of Responses to Open Question

Responses	Frequency	Percentage(%)
Ease access to library resources and services	1	2.33
Provide 24/7 library services	2	4.65
Provide stable Internet connectivity	7	16.28
Provide more computer systems with Internet facilities	5	11.63
Provide more electronic resources and services	20	46.51
Provide relevant current books in the library	7	16.28
Provide stable power supply in the library	1	2.33
Total	**43**	**100**

Multiple choices allowed

From Table 4.13, it can be observed that the suggestion with the highest responses is the need to provide more electronic information resources and services. The comparatively higher or more suggestions for electronic resources could mean preference by younger generation or NetGen for electronic information resources and services over print information resources and services. Another possible explanation could be that information resources available from the electronic sources probably satisfy undergraduate students' information needs. The second highest suggestions were provision of stable Internet connectivity and provision of relevant textbooks which recorded 7(16.28%) each. These suggestions tally with the desire for more electronic information resources and services by undergraduate students' users of university libraries as can be observed in Table 4.13. This finding is supported by MacColl (2010)'s report that new generation students demand for both print and electronic information resources. This also means that printed information resources are still needed and relevant to undergraduate students' programmes in the universities. This finding also agreed with the findings of Biradar, Kumar and

Mahesh (2009) on some undergraduate students' preference for printed information resources, despite the clamouring for electronic information resources and services. The implication of this finding is that university libraries must continue to provide both print and electronic information resources for undergraduate students use.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is presented under the following headings:

5.1 Introduction

5.2 Summary of the Study

5.3 Summary of Major Findings

5.4 Conclusion

5.6 Recommendations

5.7 Suggestions for Further Research

5.2 Summary of the Study

This study set out to investigate the utilization of print and electronic information resources and services by undergraduate students in university libraries in Niger State. There are two universities in Niger State; Federal University of Technology, Minna (FUTM) and Ibrahim Badamasi Babangida University, Lapai (IBBUL). FUT Minna operates in two libraries; Muhammad Awwal Ibrahim Library in Bosso Campus and Ibrahim Badamasi Babangida Library at its permanent site in Gidan Kwanu along Bida road. IBBU Library operates at its permanent site in Lapai and its library is named Abubakar Gimba Library. The survey method adopted for the research and questionnaire was used as instrument for data collection.

The questionnaire was divided into four sections and comprises of twelve questions. Section A deals with the background information of respondents while sections B through E deals

with the research questions. The research questions sought to find out print and electronic information resources and services provided by these university libraries for undergraduate students' use, the extent of their satisfaction with the utilization, the factors that influenced their choice of information sources, reasons for which information resources and services were used. Lastly, respondents were asked about challenges of using these information resources and an open ended question which require respondents to suggest ways to improve information resources and services for undergraduate students use in their university libraries. The respondents were provided with list of options to choose from, with the exception of question 12 which was an open-ended question.

A total number of 16,455 undergraduate students of 2013 session from the FUTM and IBBUL formed the population of this study; however, proportionate stratified random sampling technique was used from the institutional level down to departments to select sample of 165 (1%) from the two universities. The distribution of the sample comprised of 113 respondents from FUT, Minna and 52 from IBBU, Lapai. FUT Minna runs a five year degree programme while IBBU Lapai runs four degree programmes. At the time of administering the questionnaire, the two institutions had not admitted 100 level students while the 500 level students of FUT, Minna had completed their final examinations and they did form part of the population of this study. Descriptive statistical technique was used to analyze data collected.

5.3 Summary of Major Findings

After careful and critical analysis of data collected from the respondents, the following major findings were established from the study.

1 The print information resources provided in the university libraries include textbooks, reference books, journals and newspapers. Others are encyclopedias, maps and atlases. The universities libraries provided platforms such as computers, Internet access and wireless Internet without providing any significant electronic information resources.

2 The findings also revealed that the university libraries provided print information services like book borrowing, books and journals consultation, reference services and public catalogue access. Others include photocopy services, library instruction and bindery services. In the area of electronic information services, Internet access, e-books, downloading of documents, printing of documents and scanning of documents were among the electronic information services provided in the university libraries.

3 The analysis shows that respondents expressed satisfaction with book borrowing and public catalogue access. The services that recorded fair level of satisfaction from respondents also included bindery services photocopy services, reference services, and book/journals consultation. However, respondents were undecided on their level of satisfaction with inter-library loan, and referral services while library instruction recorded the highest frequency for ‘not satisfied’ with services. On the level of satisfaction with electronic information services, respondents expressed satisfaction with Internet access, downloading of documents, printing of documents and online enquire. Others include scanning of documents and e-books. In this category also, respondents were not satisfied with wireless access to e-library, OPAC and online reference services.

4 The findings also show that respondents faced some challenges such as lack of awareness of available resources, obsolete books and lack of adequate relevant books. Similarly, respondents also faced some challenges on electronic information resources and services such as unstable Internet connectivity, lack of awareness of available resources, very slow network and constant power failure.

5.4 Conclusions

It can be deduced from the analysis and summary of major findings that undergraduate students of FUT, Minna and IBBU, Lapai made adequate utilization of print information resources and services of their university libraries. However, many of the undergraduate students were not satisfied with some of the print and electronic information resources and services provided by their university libraries. The respondents suggested that university libraries should provide more information resources and services. They also expressed lack of awareness of print and electronic information resources which obviously pointed clearly to the deficiencies of undergraduate student's skills in conducting searches in information resources and the need for training.

The library information resources and services of these institutions are predominantly printed information materials and undergraduate students are desirous of both print and electronic information facilities in their university libraries. The respondents faced some challenges of print and electronic information resources and services in the university libraries. The print information resources and services are still useful and patronized by undergraduate students of these universities, while the provision of electronic information resources and services by university libraries are still a far cry from being realized. This is indicated by the complete lack of electronic library services in the

university libraries which made students to rely on online electronic information resources and services. Ironically, respondents considered the Internet access as electronic libraries which formed the basis for their responses to electronic information resources and service related questions in this research. This is because the platforms for accessing the Internet were from the university libraries. This shows that the respondents could not differentiate between online access and electronic library services.

5.5 Recommendations

In the light of the findings of this study, the following recommendations are made:

1 The university libraries should continue to procure current and relevant print information resources for undergraduate programmes because they are required and patronized by undergraduate students. The university libraries should provide electronic information resources to complement printed information resources because electronic information resources have not only become important sources of information for university library users but highly demanded by Netgen students.

2 FUTM and IBBUL should continue to provide print services and also to emphasis on providing value added electronic information services to undergraduate students beyond providing computers and access to online public Internet as is currently done by the two university libraries. The value added electronic services that university libraries should focus on include deployment of electronic library resources and services, OPAC, web OPAC, library portal, databases, e-books and link to other libraries on the net.

3 These two university libraries and subsequent ownership –the federal and state governments should strive to improve more on the information resources and services provided in their libraries in order to raise the level of satisfaction with print and electronic

information resources and services. They should also intensify training in print and electronic information resources to increase the capacity of undergraduate students in the utilization of information resources and services. The libraries should consider point of use assistance to complement the theoretical learning in the classroom. The university libraries should conduct training as means to increase print and electronic information resources awareness, access and use. The undergraduate students belong to the Net generation or culture and they are interested in fastness and remote access which can only be provided in ICT-driven information services delivery environment.

4 The FUTM and IBBUL university libraries should provide current and adequate print information resources for the undergraduate programmes. The solution to the challenges of poor power supply could be achieved by providing alternative power sources like Electric generators, Solar power energy and Inverters to support the electronic information services of these university libraries. The assistance of Mobile Network Information Providers should be considered so as to facilitate for low price high bandwidth subscription.

5.6 Suggestions for Further Research

In a study like this, the outcome is bound to ignite or generate interest that will require further enquiry. In the light of this and considering the social, economic and geographical similarities, the following topics are suggested as gaps that need to be investigated

1. Utilization of Print and Electronic Information Resources and Services of College Libraries by Colleges of Education Students in Niger State
2. Utilization of Print and Electronic Information Resources and Services of Polytechnic Libraries by Polytechnic Students in Niger State

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Appendix I

AHMADU BELLO UNIVERSITY, ZARIA

Department of Library and Information Science

Dear Respondent,

This questionnaire is designed to collect data for research on **Utilization of Print and Electronic Information Resources and Services by Undergraduate Students of University Libraries in Niger State** for the requirement of award of Master Degree in Library Science. You are kindly requested to objectively tick (✔) appropriate options or fill in the spaces provided. Your cooperation is highly solicited for the success of this work; and be rest assured that your answers will be treated with absolute confidentiality.

SECTION A: Background Information of the Respondent

1. Name of Institution: ……
2. School/Faculty: ……...
3. Department:……..……
4. Level:……
5. Sex: Male [ ] Female [ ]

SECTION B: Print and Electronic Information Resources provided and available in the University Library for use

6. Which of the following Print information Resources are available in your University Library for use?

6A.	**Types of Print Information Resources**	**Tick(✔)**
i.	Text books	[ ]
ii.	Reference books	[ ]
iii.	Journals	[ ]
iv.	Newspapers	[ ]
v.	Dictionaries	[ ]
vi.	Encyclopedias	[ ]

vii. Directories [ ]

vii. Maps [ ]

ix. Atlases [ ]

x. Others (Please specify)……..

Types of Electronic Information Resources Tick (✔)

6B.

i. Computers* [ ]

ii. Databases [ ]

iii. e-journals [ ]

iv. e-newspapers [ ]

v. CD-ROM [ ]

vi. Internet Access* [ ]

vii. Wireless Internet* [ ]

viii. Library portal [ ]

ix. Dedicated library websites [ ]

x. Others (Please specify) ……

*Platform for Internet access

SECTION C: Types of Information Services available in the University Library for Undergraduate Students use in Niger state

7. Which of the following Print and Electronic information Services are available in your University Library for your use?

7A Types of Print Information Services **Tick (✔)**

i. Book borrowing [ ]

ii.	Book reservation	[ ]
iii.	Books/journals etc consultation	[ ]
iv.	Reference services	[ ]
v.	Referral services	[ ]
vi.	Interlibrary loan	[ ]
vii.	Public catalogue access	[ ]
viii.	Bindery services	[ ]
ix.	Photocopy services	[ ]
x.	Library instruction	[ ]
xi.	Others (Please specify)……	

7B.	**Types of Electronic Information Services**	**Tick (✔)**
i.	Internet Access	[ ]
ii.	OPAC	[ ]
iii.	Databases search	[ ]
iv.	e-books	[ ]
v.	e-journals	[ ]
vi.	Online reference service	[ ]
vii.	Online training	[ ]
viii.	Online reserve	[ ]
ix.	Downloading documents	[ ]
x.	Printing documents	[ ]
xi.	Online enquiry	[ ]

xii. Wireless access to e-library [ ]

xiii. Scanning documents [ ]

xiv. Others (Please specify) ……

SECTION D: The Level of Utilization of Print and Electronic Information Services in the University Library

8. What is the level of your satisfaction with the following Print and Electronic Services provided by your University Libraries?

8A Types of Print Information Services

		Satisfied	**Undecided**	**Not Satisfied**
i.	Book borrowing	[ ]	[ ]	[ ]
ii.	Book reservation	[ ]	[ ]	[ ]
iii.	Books/journals etc consultation	[ ]	[ ]	[ ]
iv.	Reference services	[ ]	[ ]	[ ]
v.	Referral services	[ ]	[ ]	[ ]
vi.	Interlibrary loan	[ ]	[ ]	[ ]
vii.	Public catalogue access	[ ]	[ ]	[ ]
Viii	Bindery services	[ ]	[ ]	[ ]
ix.	Photocopy services	[ ]	[ ]	[ ]
x.	Library instruction	[ ]	[ ]	[ ]
xi.	Others (Please specify)……			

8B Types of Electronic Information Services

i.	Internet access (lab)	[ ]	[ ]	[ ]
ii.	OPAC	[ ]	[ ]	[ ]
iii.	Databases search	[ ]	[ ]	[ ]
iv.	e-books	[ ]	[ ]	[ ]
v.	e-journals	[ ]	[ ]	[ ]
vi.	Online reference service	[ ]	[ ]	[ ]
vii.	Online training	[ ]	[ ]	[ ]
viii.	Online reserve	[ ]	[ ]	[ ]
ix.	Downloading documents	[ ]	[ ]	[ ]
x.	Printing documents	[ ]	[ ]	[ ]
xi.	Online enquiry	[ ]	[ ]	[ ]
xii.	Wireless access to e-library	[ ]	[ ]	[ ]
xiii.	Scanning documents	[ ]	[ ]	[ ]

xiv. Others (Please specify)……..

9. Which of the following factors influence your choice of information resource? (**Multiple choices allowed**)

	Factors	**Tick (✔)**
i.	Fastness of Access	[ ]
ii.	Ease of Access	[ ]
iii.	Remote Access	[ ]
iv.	Quality of Content	[ ]
v.	Currency	[ ]
vi.	Others (Please specify)……	

10. For which of the following purposes do you use print and Electronic information resources? (**Multiple choices allowed**)

	Purpose	**Tick (✔)**
i.	Research	[ ]
ii.	General information	[ ]
iii.	Assignment	[ ]
iv.	E-mail	[ ]
v.	Current Affairs (News)	[ ]
vi.	Others (Please specify)……	

SECTION E: Challenges of Utilization of Print and Electronic Information Resources by Undergraduate Students in University Libraries in Niger State

11. Which of the followings do you consider as hindrances or challenges to your use of print and electronic information resources and services in your university library? (**Multiple choices allowed)**

11A.	**Hindrances/ Challenges - Print Information Resources**	**Tick [✔]**
i.	Lack of awareness of available resources	[ ]
ii.	Obsolete books	[ ]
iii.	Un-conducive environment for reading	[ ]
iv.	Overcrowding	[ ]
v.	Excessive control/rules of library	[ ]
vi.	Inconvenient opening hour	[ ]
vii.	Inadequate relevant books	[ ]
viii.	Residence too far from library	[ ]
ix.	Others please specify …….	

11B. Hindrances/ Challenges – Electronic Information Resources **Tick [✔]**

i. Lack of awareness of available resources [ ]

ii. Lack of computer knowledge/skills [ ]

iii. Inadequate computer systems [ ]

iv. Very slow network [ ]

v. High cost of Internet access [ ]

vi. Constant power failure [ ]

vii. Unstable Internet connectivity [ ]

viii. Others please specify …….

12. Please kindly and freely suggest ways that you think print and electronic information resources and services utilization can be improved upon to enhance teaching and learning by undergraduate students users in university libraries in Niger State.

_____
_____
_____

Thank you.