

**UNDERGRADUATE STUDENTS' ATTITUDE TOWARDS THE USE OF ONLINE  
PUBLICACCESS CATALOGUE IN FEDERAL UNIVERSITY LIBRARIES IN  
NORTH WEST STATES OF NIGERIA**

**BY**

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**BEING A DISSERTATION SUBMITTED TO THE DEPARTMENT OF LIBRARY AND  
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## CERTIFICATION

This is to certify that this research work titled “Undergraduate Students’ Attitude Towards the use of Online Public Access Catalogue (OPAC) in Federal University Libraries in North West States of Nigeria” is written by Abdullahi Usman Gusau, SPS/14/MLS/00014 of the Department of Library and Information Science, Faculty of Education, Bayero University Kano, has carried out under my supervision and guidance. I recommend this dissertation for final approval and acceptance.

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## APPROVAL PAGE

This dissertation titled “Undergraduate Students’ Attitude Towards the use of Online Public Access Catalogue (OPAC) in Federal University Libraries in North West States of Nigeria”, prepared by Abdullahi Usman Gusau in partial fulfilment of the requirements of School of Post Graduate Studies, Bayero University, Kano for the award of Master of Library and Information Science (MLS) is hereby accepted and approved.

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## **DEDICATION**

This dissertation is dedicated to my late uncle Alhaji Muhammadu Lauwali Dan Hushe, Bakin cinema Gusau, May his soul rest in Jannatul Firduasi Amen.

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## LIST OF ABBREVIATIONS

<b>ABU</b>	Ahmadu Bello University
<b>BUK</b>	Bayero University Kano
<b>CLR</b>	Council on Library Resources
<b>DOT</b>	Diffusion of Innovation Theory
<b>FUBK</b>	Federal University Birnin Kebbi
<b>FUDMA</b>	Federal University Dutsin-Ma
<b>FUD</b>	Federal University Dutse
<b>FUG</b>	Federal University Gusau
<b>GUI</b>	Graphical user Interface
<b>HOD</b>	Head of Department
<b>ICTs</b>	Information and Communication Technologies
<b>IRS</b>	Information Retrieval Systems
<b>ISBN</b>	International Standard Book Number
<b>ISSN</b>	International Standard Serial Number
<b>KIL</b>	Kashim Ibrahim Library
<b>MARC</b>	Machine-Readable Catalogue
<b>OCLC</b>	Online Computer Library Center
<b>ODLIS</b>	Online Dictionary for Library and Information Science
<b>OPAC</b>	Online Public Access Catalogue
<b>PPMCC</b>	Pearson Product Moment Correlation Coefficient
<b>RUN</b>	Redeemer's University of Nigeria
<b>SPSS:</b>	Statistical Package for the Social Sciences
<b>UDUS</b>	Usmanu Danfodiyo University, Sokoto
<b>UG</b>	Undergraduate students
<b>UK</b>	United Kingdom
<b>UNAAB</b>	University of Agriculture Abeokuta

## ABSTRACT

This study investigated undergraduate students' attitude toward the use of Online Public Access Catalogue (OPAC) in Federal University Libraries in North-West State of Nigeria. The objectives of the study is to determine the level of undergraduate students' awareness about OPAC, the extent to which undergraduate students have access to OPAC, to ascertain the extent to which undergraduate students make use of OPAC, to find out undergraduate students' attitudes toward the use of OPAC, to identify the factors facilitating the use of OPAC and to identify the challenges associated with the use of OPAC by undergraduate students of federal University Libraries in North West States of Nigeria. The study used a quantitative research methodology using cross-sectional survey design to collect data from the respondents. Four out of Seven federal university libraries in North West State that has availability and functional OPAC were used as secondary population. A sample of 392 questionnaires were administered among undergraduate students in the four federal university libraries in North West State, but 314 copies of questionnaires representing 81.0% were returned completed and found usable for the study. The data collected were analysed by descriptive and inferential statistics using the SPSS version 16.0. The findings of the study revealed more than half of the undergraduate students were highly aware of the OPAC in their university libraries majority of them become aware of OPAC through their colleague, orientation and the use of library course. The findings also showed that most of the students have access to the library OPAC and majority of them access it from computer terminal in the library premises and on the campus network. Furthermore, the findings revealed that majority of undergraduate students were used library OPAC daily and many of them use it to makes their assignment/class presentation, project research work. The study also disclosed that, majority of the undergraduate students have positive attitude towards the use of OPAC because they found it enhances easy access to information resources in the library and feel comfortable using it. On the factors facilitating the use of OPAC the study revealed that user's information searching skills, awareness of benefit drive from the use of OPAC Orientation programmes, increase number of OPAC terminals as well as assistance of library staff at OPAC terminals are some of the factors that facilitated the use of OPAC by undergraduate students in university libraries. The research further discovered several challenges associated with the use of OPAC by undergraduate students in federal university libraries in North west state of Nigeria, which includes: less number of computer at OPAC terminals, lack of orientation from the library staff, lack of library users guide on how to use OPAC, lack of assistance from library staff, erratic power supply, and lack of awareness about OPAC from library staff. Based on these findings the study recommended among others: that there should be enough computers at the OPAC terminals, the university library should provides library user guide for fresh undergraduate students on how to use OPAC during registration with library, organize orientation programmes for the fresh undergraduate students on how to search information resources on OPAC, their OPAC interface designed should be made simple in order to encourage the use of OPAC by students and ensure less complexities when searching information resources and also provide alternative sources of power supply to ensure that the OPAC can be utilized by the students at all times

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The main purpose of University Libraries is to support learning, teaching, and research activities. In order to achieve this, the university libraries should provide information resources in both print and non-print formats as well as systematic organization of these resources in order to facilitate easy access and use of the library materials by clientele. Arshad and Shafique (2014) stated that prior to the emergence of OPAC, usually; libraries were traditionally known to provide access to the materials through card catalogue and book Catalogue. Therefore, for users to find information about any item in a library collection, they must flip through or search a collection of catalogue cards in a filing cabinet using appropriate access points for known items. Where the item is not known, the subject catalogue is used and this makes the search exercises a cumbersome one, time consuming and usually slow. Today, the adoption of technology into library operations has swept off all of this, and users can get the bibliographic details, call mark and location of book in the library at the click of a mouse. A University Library is a library attached to higher institution of learning to support goals of its parent organization thereby helping them to impart knowledge and skills to learners i.e. students. However, the primary goals of the University Libraries are to meet the information needs of staff and students of the University community they are attached to first, then their host community, state, nation and the larger global community. They support the objectives of a University, which include teaching, learning and research and community service.

When computer was introduced in libraries, various library activities started being automated, and catalogue is the earliest component of library service to be computerized. Initially, computers were used by the library for preparation of catalogue entries and then printed out on the catalogue cards. With time and increased reliability of computerized catalogue, the OPAC system opened for users;

interface made for users so that a person with minimum exposure to computers could use it conveniently. Following, the advancement in information and communication technology ICTs in Libraries and Information Centers, libraries have change the techniques of access, storage, retrieval and dissemination of information resources to its potential users. These influence libraries to revolutionize the traditional methods of accessing their resources through the provision of Online Public Access Catalogue (OPAC) which serve as a new modern catalogue that replace card catalogue.

Online Public Access Catalogue often abbreviated as OPAC is simply computerized catalogue or online database of materials held by a library or group of libraries which allow users to search library catalogue principally to locate books and other material available in a library (Omoike and Oke, 2014). Looking at the above definition OPAC is an electronic version of the card catalogue or a gateway to library's collection, today OPAC have become a tool for search and retrieval of information resources by undergraduate students in the university libraries, and also allow them to browse and see the collections, issue status of each document of the library and reserve or renewal a document of their interest when needed. Furthermore, with OPAC multiple users can query the database simultaneously unlike the traditional card catalogue; and bibliographic records stored in a database can be quickly retrieved for display on computer terminals. Similarly, the development of OPAC has made users as well as library professionals to locate and access library resources easily without waste of time and energy. Library users are very important, and libraries exist because of them. They should therefore be satisfied with the service they receive.

Today, OPAC is one of the technologies that provide access to any information contained in the record of an item in the library, because it allows users to search out what documents are available in the library collection by authors, titles, subject and keywords from a terminal and also allows printing, downloading or exporting records via different electronics means. As a result most university libraries adopted the use of OPAC for quick and easy access to information resources.

Nowadays many universities libraries are involved in the installation, training and use of OPAC system, because OPACs are the keys to library's collection hence they allows users to search out what documents are available in the collection using dedicated terminals in the library. The rapid retrieval and the interactive capacity with online system allows the search to be modified dynamically as the session progresses through the standard online search capabilities such as keyword search, Boolean combinations, truncations and limiting search results by date, publisher, language and material formats has made these systems quite popular (Kumar & Singh, 2014). Thus assist users in retrieval of library resources more easily thereby eliminating the labour of pulling the catalogue cabinet before user to know where and or how to locate a book on the shelf.

The undergraduate students need a modern retrieval device that can save time and energy of users like OPAC, because it make easy access to timely, accurate and relevant information resources for learning and the research purposes looking at the huge number of information resources kept in library and the student population. In addition, OPAC have greatly increased the speed of searching out information in the university libraries. They have also brought considerable relief to undergraduate students in universities, as students can conveniently walk into university libraries search its holdings on the OPAC and have access to the information (Ezeji, 2008). The undergraduate students of university library need information to satisfy their needs in order to promote and enhance their academic pursuit during their course of study in the university. The mandate of the university library is therefore to provide adequate and relevant information resources both in print and online for users to support class work, assignments, research/project work, term papers, seminar and presentation by providing relevant information and services provision for effective and efficient achievement of academic pursuit.

Attitudes are inclinations and feelings, prejudices or bias, preconceived notions, ideas, fears, and convictions about any specific topic. Attitudes represent the conceptual value of these terms in the

minds of students and not the values of the technologies themselves. Positive attitudes are fundamental in implementing new technologies (McLeod, 2014). The undergraduate students constitute one part of the society who is fortunate to have access to a variety of information resources kept in the university libraries. More so, universities use considerable proportions of their budgets to fund their libraries in order to provide necessary information resources that will cater for the students and researchers. Therefore, these resources should be organized in a systematic and logical order so that access to it can be easier whenever the need arises, this is one of the fundamental reason behind the creation and development of Online Public Access Catalogue (OPAC) to serve as a retrieval tools that would assist students in knowing the library holding and gate access to them easily.

This becomes an important part of library service over the last few decades. On the other hand, Rexwhite & Ejiro (2012) define attitude as a settled way of thinking or feelings, typically reflected in a person's behaviour, a position of the body proper to or implying an action or mental state. An attitude is a hypothetical construct that represent an individual's degree of like or dislike for something. Attitudes are generally positive or negative virus of a person, place, thing or event. This is often referred to as the attitude object.

In conclusion, the researcher used quantitative research methodology using Survey research design which will enable the researcher to gather large amount of data that can be easily organize for analysis. Also a structure questionnaire will be use for data collection from the respondents.

## **1.2 Statement of the Problem**

Online public access catalogue is a computerized library catalogue that is available to the public which provides bibliographic records describing the books and other materials owned by a library or library system. As such OPAC is very useful to users because it provide them with details of every library materials. OPAC plays an important role in assisting users with multiple choice to retrieved the library holdings and gate easy access of library collection, through author title subject call number, International Standard Book Number ISBN, date and place of publication etc. similarly, OPAC provide search capabilities such as keyword searching, Boolean searching, truncation, proximity searching, and item identity number searching. And above all is time saving for the library users.

The need for the use of libraries services and facilities has become very important. In the library, online public access catalogue enable the use of centrally produce bibliographic records by the users to know what kind of library materials are available on a given subject for users. Equally, it's the role of the libraries to understand the need of its users as well their attitudes towards the use of services offered to them only then can users optimize the benefits that such services tend to offers. However, not much is known about the attitudes of undergraduate students towards the use OPAC in the federal university libraries, therefore it becomes imperative to take closer look at those attitudes, which have an effect on how undergraduate students make use of the OPAC and which will in turn affect the overall success of the library's OPAC.

Provision of online public access catalogue in University Libraries is now a global phenomenon. This prevailed based on the numerous benefits associated with the use of the OPAC which include: save time, easy access to library materials and allow remote access to the library resources through Web-OPAC. Consequently upon these benefits associated with the use of OPAC alongside the need to maintain global standard. Nigerian University Libraries not withstanding their meagre budget allocations, have made frantic efforts to provide and installed OPAC for their users. However,

literature, researcher's observation and pre-research discussion with librarian in some Federal University Libraries in North West States of Nigeria shown there was low utilization of OPAC by users especially among undergraduate students who are the most frequent users of academic libraries in the Federal Universities. This situation draw my attention to examine why OPAC is underutilized by most undergraduate students despite it relevancy in retrieval of information materials in the library. Now considering the global trend concerning new information retrieval system/tool in this electronic age, and the fact that positive attitude toward the use of OPAC could influence students' academic research performance effectively.

This makes the researcher feel the need to fill this gap in knowledge through conducting this study which focuses on undergraduate students' attitude toward the use of OPAC in the federal University Libraries in North-west state of Nigeria.

### **1.3 Research Questions**

The study attempted to answer the following research questions:

1. What is the level of undergraduate students' awareness about OPAC in federal University Libraries in North West States of Nigeria?
2. To what extent do undergraduate students have access to the OPAC in the federal University Libraries in North-west state of Nigeria?
3. To what extent is OPAC used by undergraduate students in the federal university libraries in North West State of Nigeria?
4. What are the attitudes of the undergraduate students towards the use of OPAC in the federal University Libraries in North-west state of Nigeria?
5. What are the factors facilitating the use of OPAC by undergraduate students of federal University Libraries in North West States of Nigeria?

6. What are the challenges associated with the use of OPAC by undergraduate students of federal University Libraries in North West States of Nigeria?
7. What are the relationship between use of OPAC and
  - a. Demographic characteristics of respondents
  - b. Awareness,
  - c. Accessibility
  - d. Attitudes

#### **1.4 Research Objectives**

The broad objective of the study is to know the attitudes of undergraduate students toward the use of OPAC in federal University Libraries in North West States of Nigeria. Secondly the reason for choosing this topic (Undergraduate students' attitude toward the use of OPAC in North West State of Nigeria.) is to encourage student to patronize and utilize OPAC in their respective university libraries whenever they want search any information resource in the library.

The study is designed to achieve the following objectives:

1. To determine the level of undergraduate students' awareness about OPAC in the federal University Libraries in North West States of Nigeria.
2. To determine the extent to which undergraduate students has access to OPAC in federal University Libraries in North West States of Nigeria.
3. To ascertain the extent to which undergraduate students make use of OPAC in the federal University Libraries in North West States of Nigeria.
4. To find out undergraduate students' attitudes toward the use of OPAC in the federal University Libraries in North West States of Nigeria.
5. To identify the factors facilitating the use of OPAC by undergraduate students of federal University Libraries in North West States of Nigeria.

6. To identify the challenges associated with the use of OPAC by undergraduate students of federal University Libraries in North West States of Nigeria.
7. To determine the relationship between use of OPAC and
  - a. Demographic characteristic of respondents
  - b. Awareness,
  - c. Accessibility
  - d. Attitudes

### **1.5 Hypothesis**

The following hypothesis was tested at chapter four.

H1- There is no statically significant relationship between Gender of respondents and the use of OPAC

H2- There is no statistically significant relationship between students' level of study and Use of OPAC

H3- There is no statistically significant relationship between Awareness and Use of OPAC

H4- There is no statistically significant relationship between Accessibility and Use of OPAC

H5- There is no statistically significant relationship between Attitudes and Use of OPAC

### **1.6 Significance of the Study**

The study aims to have an input on undergraduate students' attitude towards the use of OPAC in the federal University Libraries in North West states of Nigeria. It also hoped that the study would be a useful not only for the Federal University Libraries in North West zone but also to other federal University Libraries in the country, and will bring tremendous contribution to the existing literature and body knowledge in the field of librarianship. The study would significantly benefit the following stake holders as follows:

1. University Libraries: This study can be beneficial to University Libraries policy makers who need to come up with a set of standard policy guiding OPAC use in Federal University Libraries

that would aid uniformity, consistency and lead to increase in use of the library OPAC by undergraduate students in Federal University Libraries in Nigeria as a whole. It also hope that the study would benefit the management of University Libraries by encouraging them to pay more attention on the improvement of OPAC services to their users through orientation and guidance of the students on how to retrieve information using OPAC in the library. This will help user to facilitate quick and easy access to their information resources.

2. Undergraduate Students: Among the significance of this study is to establish increased patronage of undergraduate students to the library OPAC in Federal University Libraries in North West States of Nigeria and also sustaining its use. It will be of immense assistance to library undergraduates in their various levels in knowing that OPAC can be used for their studies and research and also help in easier knowledge of library possessions. Furthermore, students that are not patronizing and utilize OPAC services to know that it search strategies exceeded those that can be found in manual catalogue, example the use of Boolean search in OPAC and also to become fully understand that using the OPAC will save their time whenever they came to the library to check out any library materials of their choice.
3. Researchers: The findings of the study would be useful to the researchers because is likely to provide useful information to their area of research interest. It also hope that the result of this study would serve as basis for future study on OPAC use in university libraries as there are more benefits of OPAC in this information age which is yet to be known.
4. To the Government: also the government agencies and ministries would also find the study useful for making policy formulation on the online public access catalogue.

## **1.7 Scope and Limitation of the study**

This scope of study comprises of all the Federal University Libraries in North West States of Nigeria. Other type of libraries such as Public libraries, Special libraries, School libraries, State and Private University libraries in North West States are excluded from the study. The study covered four (4) Federal University Libraries in North West State of Nigeria out Seven (7) Federal University Libraries from the North West States, because three out of seven have no available or functional OPAC in their university libraries as of the time the study started. The study also covered undergraduate students of the Federal University in North West States. The post-graduate and post degree students are not part of the study.

The limitations of the study comprises of Firstly, the literature reviewed by the researcher shows that most of the literature came from Asian countries like Malaysia, Indian and Pakistan and very few in Africa countries including Nigeria. Secondly, another limitations the researcher encountered in the course of carrying out this dissertation were financial constrains which in all research work affects the investigations process so also time constrain which was heightened by the fact that the researcher has to take into consideration while carrying out the study in the same vein, the researcher found it very difficult in locating recent materials, which were mainly journals which would have the investigation more currents.

## 1.8 Operational Definition of Key Terms

**Awareness:** means information about the existence of something around persons' environment which leads to accessibility. In the context of this study awareness refers to undergraduate student knowledge about the existence of online public access catalogue in their university library.

**Access:** Means the degree to which someone has the opportunity to make use of something. In the context of this study, access is refers to undergraduate students opportunity or right to approach, contact and make use of OPAC in the federal university library.

**Use:** The state of being used for a purpose in order to benefit and enjoy something or service.

**Attitude:** This refers to individual positive or negative feeling towards performing a particular task using new systems. Attitude in the context of this study refers to the undergraduate student's feeling; i.e. (negative or positive) towards the use of OPAC in the federal University Libraries in North West States of Nigeria.

**Online public access catalogue:** is an online database of materials held by a library or group of libraries, principally use to locate books and other material available at a library. In simple language, it is an electronic version of the card catalogue. OPAC is the gateway to library's collection.

**Use of online public access catalogue (OPAC):** In the context of this study, refers to the actual use of online public access catalogue to locate and retrieve information resources in the University Library by undergraduate students. Therefore, use of online public access catalogue simply refers as the extent to which undergraduate students of federal University Libraries in North West States of Nigeria, patronize and utilize OPAC system held in the libraries.

**University Libraries:** This refers to libraries which is attached and maintained by a University, with aims to provide information resources mainly for the students, researcher as well as the academic staff of the university.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

Generally, the purpose of a review is to read, analyze and evaluate critically segments of a published body of existing knowledge related to the research area, in order to assess the state of knowledge in the area and make an input on it. In view of this, the researcher has studied the views and opinions of many scholars on the topic to ascertain the account of what has been covered on the topic of research by accredited scholars and researchers.

The study has identified and discussed some related pertinent literature as defined by the scope. In this section, the researcher reviewed relevant and related literature in line with the variables of study base on the topic of research “undergraduate student’s attitude towards the use of online public access catalogue in the federal University Libraries in North west states of Nigeria”. As such, the reviewed literature has been presented under the following sub headings:

2.1 Introduction

2.2 The Concept and Significance Online Public Access Catalogue

2.3 Application of Online Public Access Catalogue in the University Libraries

2.4 Awareness of Online Public Access Catalogue

2.5 Access to Online Public Access Catalogue

2.6 Use of Online Public Access Catalogue

2.7 Attitude of Users towards the use of Online Public Access Catalogue

2.8 Factors facilitating the Use of Online Public Access Catalogue

2.9 Challenges Associated with the use of Online Public Access Catalogue

2.10 Theoretical/Conceptual Framework

2.11 Summary of the Reviewed and

2.12 Uniqueness of the Study

## **2.2 The Concept and Significance of Online Public Access Catalogue**

The term Online Public Access Catalogue has no single definition. But it has been defined by different scholars in different point of view. ALA Glossary of Library and Information Science (1983) defines OPAC as a computer-based and supported library catalogue, it designed to be accessible via computer terminals, so that library users may directly and effectively search and retrieve bibliographic records without the assistance of a human intermediary. This implies that an OPAC is a computerized library catalogue that is available to the public, which provides bibliographic information about resources kept in the library.

OPAC has become a modern information retrieval system in the libraries today. Sankari, Chinnasamy, Balasubramanian & Muthuraj (2013) are of the view that OPAC is a computerized catalogue which acts as an information retrieval system for the user. It has also revolutionized access to bibliographic information through search capabilities such as keyword searching, Boolean searching, truncation, proximity searching, and item identity number searching. Today, a large number of libraries have automated their operations and services using this technology to fulfil their users' needs. Public catalogue, which is an important service of the library, is not exceptional to computer technology. Nowadays a large number of libraries provide OPAC services to their users to find out their documents easily in the library. OPAC contains all the bibliographic information of a library or an information centre, in a nutshell OPAC a door or a gateway to the library and information centre's collection.

Similarly, Reitz (2011) viewed OPAC as a database composed of bibliographic records describing the books and other materials owned by a library or library system accessible via public terminals or work stations usually concentrated near the reference desk to make it easy for a user to request the assistance of a trained reference librarian.

Furthermore, Asubiojo & Fabunmi (2013) describe OPAC as an online database of materials held by a library or group of libraries that provide a platform for users to search and to locate books and other materials physically available in the library. It is an information retrieval system contains bibliographic information of a library or information centre. It is a modern and flexible form of catalogue, usually instantaneous that provide sophisticated access to any recorded information within a computer. Similarly, they emphasize that OPAC is an interface of information retrieval system, which assists information searchers to access resources of libraries using several access points. Traditionally, it is concerned with searching for and retrieving bibliographic records of information items instead of full-text of the content of resources. It has made searching and retrieval of bibliographic records of materials easier and faster. Online Dictionary for Library and Information Science ODLIS (2002) defined OPAC as:

An acronym for online public access catalogue a database composed of bibliographic records describing the books and other materials owned by a library or library system, accessible via public terminals or workstations usually located near the reference desk to make it easier for users to request the assistance of a trained reference librarian (p.320).

Unlike manual card catalogue online public access catalogue has more searching capability as most online catalogues are searchable by author, title, subject, and keyword and allow users to print, download, or export records to an e-mail account. OPAC is an online bibliography of a library collection that is available to the public, and computer based catalogue that can be access through computer terminals in a library. It can also define as a computerized database of a library's holdings. Similarly, Asokan & Dhanavandan (2015) noted that OPAC changed the conventional card catalogue system. In the new system, data can be stored within computer and then the required entry can be retrieved immediately through OPAC system in any format, it is increasingly well-known information retrieval system for library users. Libraries' OPCs are one of the highly visible end user searching tools. The OPACs allow users to access resources of libraries, publishers, and online vendors. The ICT age

has placed the OPAC at the heart of rendering effective library services. Thus, providing access to important information resources through the library OPAC can offer a more complete research picture for users, which may in turn increase users' patronage of library resources. Hence, it is strategic and vital in providing access to library holdings (Shorunke, Eluwole & Gbenu 2013).

Eyitayo (2009) emphasized that library and information should move their catalogue from manual to automated system because users have limited time searching the card catalogue for it is usually tedious and their attention is relatively scarce. Today's library users are in need of timely access to relevant information and information sources. Without any reasonable doubt, one can state that the main duty of the library is to use every techniques of modern science to accelerate access to printed books and other information sources. Aina (2004) however, felt that OPAC is the most modern and most efficient form of catalogue because it possesses all the advantage of other forms of catalogue due to its flexibility. He also stated that it is possible to access the records through several points; it does not occupy too much space and can be provide in many places. You just need a microcomputer with a large memory in order to operate it successfully and be update easily.

Butterfield (2003) stressed that with the evolution of OPAC, which is a networked, universally accessible entity, it became possible to access the library collections without pulling the drawers of three by five cards. In addition, Alabi & Bukar (2010) pointed out that OPAC is fast and easy and they preferred it than card catalogue. Users also need more terminals to do their work independently and that they conduct more subject searches than any other type of search.

Similarly, Adedibu (2008) in his study found out that the card catalogue and the OPAC, as the most essential library tools in accessing the library collection are not always consulted because of inadequate knowledge of how to use them.

Asubiojo & Fabunmi (2013) also noted that the development of OPAC has made University Libraries all over the world to implement it in order to provide faster, effective and different services in their libraries. In essence, library users are at liberty to use OPAC to access library resources. Currently, it is no more news that OPAC where used in most libraries of the world to find all print and electronic collections in the University Library. Omoike & Oke (2014) noted that among the 20<sup>th</sup> century's grandest information technology accomplishments was the transformation of the library card catalogue into the online catalogue.

OPAC has transformed the traditional accessibility of libraries resources in libraries, particularly academic libraries using several access points. Traditionally, it is concerned with searching and retrieving bibliographic records of information items instead of full-text of the content of resources. It has made searching and retrieval of bibliographic records of materials easier and faster. Studies show that most information searchers tend to use easily available information sources rather than sources that require considerable efforts. For instance, library users will prefer to search a database that is fast, easy and retrieve precise records of items they actually need (Guha & Saraf, 2005). The use of OPAC has brought about enormous changes in the library practices more especially in the issues of retrieval of information in the library. Furthermore, it has made the library collection, easily accessible to everyone by breaking the physical boundaries of the library.

Significantly, Itunu, Onuyeyon & Aluko-Aruwolo (2014) pointed out that, OPAC as an Information Retrieval System (IRS) helps library users to filter through a pool of sources, so that only those documents that are relevant to their information needs are actually, retrieved. It is a tool designed to facilitate information retrieval process in this information age. They further mention some of the importance of OPAC in University Library as follows:

- It facilitates the extraction of relevant documents or information from a large collection of documents in response to a user's request;

- It provides different search elements: by author, title, subject, call number, classification number, series, International Standard Serial Number ISSN and International Standard Book Number ISBN (p.71).

Similarly, Ukpebor (2011) noted that OPAC is used to locate books, to find non-print materials, to find out whether required information resource is available in the library or not, to compile bibliography of books on a particular subject and to check the number of copies in library stock. He however highlighted other advantages of OPAC below.

- Provides wider access, since users can retrieve information from any participating library or even search online from their home computer;
- Provides the public with direct access to a library bibliographic database through the use of terminal searchable through a variety of access points greater than those available through card form catalogue;
- Is searchable with a common command language, which may be transferred when the public moves from one library to another;
- Display search result in readily understandable form;
- Provides useful link to different databases and multiple users can query the database simultaneously (p.109).

Based on the above unique advantages of OPAC Kumar (2010) recommended that libraries should develop and maintain an integrated OPAC with both internal and external resources as well as printed and other formats of knowledge.

### **2.2.1 The Origin and development of Online Public Access Catalogue**

The origin and rapid development of online public access catalogues was that some libraries began to use Machine-Readable Catalogue (MARC) bibliographic information for their circulation systems in an online mode. As a result, number of libraries tried to help their patrons in checking whether an item was on loan, on order, or at binding. This was a form of public enquiry module, which later developed into OPAC, the acceptability of online public enquiry modules, and pressures from patrons and librarians, libraries began to consider developing OPACs with more bibliographic information, i.e., full

MARC records and more searching capabilities, such as keyword access and Boolean searching. Moreover, the opportunity of feedback from librarians and library patrons has provided a continuing momentum for upgrading the structure, contents and capabilities of online catalogues (Fattahi 1997).

Tracing the historical development of online public access catalogues, Hildreth (1984, 1989) and Matthews (1991) have identified three generations of OPACs. This categorization is based on the features and capabilities of OPAC in the processes of input, storage and output of bibliographic information. Mathews further, claims that most of the existing OPAC are still in the first or second generations and only a few systems have moved beyond first-generation. Added to the three generations identified by Hildreth and Matthews, recent advances in OPACs using Graphical User Interfaces (GUIs) have introduced a fourth generation to online catalogues.

Since their emergence, OPACs have undergone large scale improvements but the basic contention remains their accessibility by library clientele without any formal training. In the light of their functions, capabilities, OPACs according to Hildreth & Matthews (1991) have developed through the following three generations:

- a. First-generation OPACs
- b. Seconds-generations OPACs
- c. Thirds-generations OPACs

### **First-generation OPACs**

First generation OPACs began from 1960s to 1970s, which provided computerized access to catalogue records using the Machine Readable Catalogue MARC bibliographic format. This generation requires character-by-character matching between user query and bibliographic record, first-generation OPAC were in fact computerized card catalogue with almost the same traditional features. In contrast to the patrons' expectations from their use of computerized database systems, these new library catalogues provided limited author, title and controlled vocabulary subject heading access points. For this reason,

first-generation OPAC has been criticized as having no advantages over the card catalogue (Hildreth 1984, 1987). In view of the above the first generation OPAC worked like a card catalogue because it was not user-friendly as user/system interaction was quite limited to author, title and control vocabulary subject heading access points.

### **Second-generation OPACs**

After first-generation followed by the second generation OPACs in the late 1980s, which enhanced the search techniques by introducing keyword searching and Boolean operators to combine keyword search terms and have gone through several cycles of change and transformation. With further developments in information technology, it was possible to provide a more sophisticated system for input, storage and output of bibliographic information. Second-generation OPACs are a departure from traditional card catalogues and incorporate many new features for the provision of effective access. In contrast to the limited input, storage and output capabilities of first-generation online catalogue, second-generation online catalogue is characterized as being powerful tools for searching of bibliographic information. Using Keyword search, Boolean keyword search, cross index search and increasing or reducing of search results are among the features of second-generation online catalogue (Matthews 1991 & Hildreth 1987). In addition, Hildreth (1987) summarized criteria for second generation of OPAC as follows:

- Subject access
- Keyword access
- Boolean searching
- Index term browsing
- Shelf list review/scan
- Full standard bibliographic records
- Multiple display formats
- Two or more dialogue models
- Interactive search refinements/modification
- Search results display/print manipulation
- Help facility, context-sensitive
- Informative error messages
- Actions and how to option prompts

- Search term approximate match routines (P. 112)

The online catalogues are changing ever since, depending on the trends in information technology and its application in libraries. Each technology develops its own OPAC based on software they use, thus providing a new breed of services for retrieving bibliographic information of its collection and each system will be in operation for few years. However, despite the improvements, the second generation OPACs have made over the first generation, Hildreth (1987) regards them as ‘deficient tools’ for effective subject searching, for the following reasons:

- They offer little or no help in translation of entry query terms into the vocabulary used in the catalogue;
- They provide no help to the user in making alternate search statements and techniques, when the initial approach fail;
- They do not in all cases lead to a successful free text search(e.g. of the title words); to the corresponding subject headings or class numbers assigned to a broader range of related material;
- The retrieval records are generally devoid of such information as table of contents , abstracts and book reviews, that might help user to judge the usefulness of the documents;

The above listed deficiencies were investigated and some of the remedies that emerged were incorporated into third generation OPACs to enhance their subject searching capability. These systems are enriched by the inclusion of additional controlled and uncontrolled access points. Queries are accepted as a ‘natural language’ statement eliminating the need for the user to know query formulation and search techniques. Some of the systems use partial match techniques instead of Boolean operators. The retrieved sets are sometimes ranked according to the query relevance. These catalogues ensure vastly improved search system interaction at every level of the search process.

### **Third-generation OPACs**

The third generation OPAC system has also combined the important features of the first and second generations by providing both phrase searching and keyword searching. Due to the growing sophistication and availability of technology, new capabilities are being added to online catalogues making them more adaptive to the needs of library patrons. Free text search, enriched database search and simultaneous journal citation searching are among the retrieval capabilities in third generation online catalogue. Furthermore, the operational assistance such as automatic, context-based correction is also available (Matthews 1991). He summarized the third generation OPAC functionalities including second-generation functionality plus.

- Natural language query expressions
- Automatic term conversion/matching aids
- Closest, best-match retrieval
- Ranked retrieval output
- Relevance feedback models
- Intelligent navigation aids
- Integration of keyword, controlled vocabulary, and classification based search approaches.
- Expanded coverage and scope
- Extended access range via linkages and networks (p.137)

Furthermore, the third generation OPAC has converted to web-based OPAC system. Beginning from the late 1990s web-based OPAC started to emerge, which has been achieved in providing easy access to bibliographic information by using graphical user interfaces (GUIs) such as windows. These systems are considered as fourth-generation OPAC and have moved away from the traditional menu-type interfaces and are more associated with client server and graphical user interface. However, Babu, Ramesh and O'Brien (2000) characterized the features of Web-OPACS:

- Graphical user interface (GUI)
- Standard features of traditional OPAC
- Availability of hypertext links through bibliographic records
- Emulation of search engines in terms of appearance and search features
- Availability of full-text, and
- One –interface to search all electronic information(p.240)

Prior to the emergence of OPAC, for users to find information about any item in a library collection, they must flip through or search a collection of catalogue cards in a filing cabinet using appropriate access points for known items. Where the item is unknown, the subject catalogue is used. This therefore makes the search exercises a cumbersome one, time consuming and usually slow (Omoike & Oke 2014). Nowadays, with advances in computer and communication technologies, the growth of bibliographic utilities and networks and the stress of browsing through card catalogues, have led to the design and development of online public Access catalogue (OPAC) which is an example of the physical forms of catalogue (Babu & O'Brien, 2000).

With the arrival of the internet, most libraries have made their OPAC accessible from a server to users all over the world (i.e. Web OPAC). Online public access catalogue enables users or library patrons from the comfort of their homes, offices and their leisure, look at all titles by an author or within a particular subject area or subject area or search for a specific title and then request for the library staff (Hamilton, 1993).

From the above literature we realized the significance of OPAC in simplifying the access to library materials by way of creating a central database of the library holdings which provides enable users to identify and retrieve information resources easily. The researcher first began by defining the concept of online public access catalogue OPAC and examining it significant in searching information resources by author, title, subject and keyword. The researcher also traces the historical development of OPAC from the first generation which shows that library OPACs first emerged in the late 1960s to 1970s, by providing computerized access to catalogue records using MARC (Machine Readable Catalogue) bibliographic format. The First generation OPACs were little more than poor imitations of print retrieval tools. Therefore, Access points were limited only to those that were available in the card

catalogue, that is, left-anchored searches. First generation OPACs were primarily book finding lists and worked best for known-item searching.

The second generation OPACs in the late 1980s showed major improvements. This generation was marked by significant improvement for user interfaces. Keyword searching, use of Boolean operators was introduced, thus increasing the number of access points available for searching as well as increasing or reducing of search results these are among of some major improvement in second-generation online catalogue. Therefore, this shows that the second-generation OPACs are a departure from traditional card catalogues and incorporate many new features for the provision of effective access.

The third generation OPACs combined the important features of the first and second generations. As a result the third generation OPACs move beyond simple matching and Boolean Operations towards more sophisticated search and matching techniques by incorporating a number of techniques to improve subject access. However, new capabilities are also being added to online catalogues making them more adaptive to the needs of library patrons.

In conclusion, it is good for every University Libraries to acquire and installed OPAC because of it significant to undergraduate students and researchers in accessing library collections without any difficulty where necessary. This gives users chances to utilize library resources of their choice in timely and easiest way.

### **2.3 The Application and adopting of Online Public Access Catalogue to University library**

The advancement in information and communication technology ICTs infrastructure and subsequent development of Online Public Access Catalogue have change the traditional methods of information access and retrieval which encourage many University Libraries to adopted the use of OPAC. As a result over the past decade number of libraries have abandoning the traditional card catalogue as a

means of access to their collections and switching over to computer-based catalogue. This phenomenon is characterized as transition from manual methods to mechanical method in the design and development of Online Catalogue known as OPAC, purposely to enable a user of the collection to find out the physical location of the information resource in the library. It is an access tool and resource guide to the collection of a library or libraries which provides bibliographic data in machine readable form, facilitates search interactively on computer terminal by a user.

The numerous advancement in computer and communication technologies, the growth of bibliographic utilities and networks and the stress of browsing through card catalogues, have led to the design and development of online public Access catalogue which is an example of the physical forms of catalogue (Babu & O'Brien, 2000).

Ansari & Amita (2008) carried out a study on the applicability and utility of the OPAC in five libraries in New Delhi. A questionnaire was distributed randomly to 128 users, out of which, 115 responded. This study found that most of users (56 per cent) generally preferred the OPAC for searching for their documents. The study recorded that the users were moderately (38 per cent) aware about the expert search. Most of users had tendency to use the OPAC frequently, only 6 per cent users avoided to use the OPAC. Most of users (39 per cent) changed the search option when search fails; 29 per cent took help from the library staff; 23 per cent checked the keywords and 9 per cent never tried again. 35 per cent of users were fully satisfied with the success and half of users were moderately satisfied.

Similarly, Kumar (2013) conducted a study on the Effectiveness of an OPAC useful in this respect. However, the data showed that a high percentage of respondents were utilizing the OPAC as a search tool for retrieving documents. Also, most of the users handled the OPAC themselves. Significantly, the satisfaction level of users rose higher as with the availed OPAC facilities. Nevertheless, not many users were aware of the expert searches provided by OPAC. The Librarians, especially those from the

developing nations, may choose their library software packages keeping in view the user's expectation with respect to OPACs.

Furthermore, Antell & Huang (2008) opined that the ability to locate a resource and reference materials without stress makes OPAC an important tool in the library, the importance of OPACs has increased in recent years, mainly due to the large number of resources now available in most libraries and academic libraries in particular.

In the same vein, Rajput, Naidu & Jadon (2008) investigated the use of the OPAC by the users in Devi Ahilya University Library, Indore, Madhya Pradesh. The study revealed that 84 per cent of users used the OPAC. For finding the documents, 39 per cent of users chose the OPAC; 33 per cent the card catalogue and the remaining users other means for the same purpose. 38 percent of the respondents approached the OPAC by author; 35 per cent under the title and 10 per cent through the subject. Majority of respondents (30 per cent) have faced problems of terminal. 21 per cent respondents encountered the problem of lack of staff. Majority of users (50 per cent) responded for training in promoting the use of the OPAC. Nearly two-third of users opined for assistance/advisor near the OPAC. Half of respondents were happy with library staff.

Similarly, Kaur & Kathuria (2015) studied on use of OPAC in Bhai Kahn Singh Nabha Library, Punjabi aims to look at OPACs operations in the light of the philosophy of information, communication theory and semiotics, and to revisit the fundamental questions about the nature of library OPACs and the ways in which they function. This exercise is pursued through the examination of the multiple tensions, implicit in any cataloguing or indexing system: the competing requirements of organization and retrieval, description and classification. The author finds that for an OPAC to be practicably usable the potential complexity of the information it contains must be reduced to a manageable level of simplicity. OPACs purport to allow complete retrieval, even though data structures

and index definitions are not transparent. A clear theoretically based understanding of these issues is essential to ensuring optimal OPAC design.

In a similar view, Singh, Naidu & Jadon, (2008) studied the application and use of Online Access Catalogue OPAC in the Devi Ahilya University Library. The study found out that the tool OPAC is useful and suggested there must be someone near the OPAC to help in retrieving the required documents. Similarly, Fattahi (1995) in his comparative study of online and card catalogue concluded that the interactive online catalogue has a lot of advantage in terms of content, structure, searching capabilities and user satisfaction.

Furthermore, Sankari, Chinnasamy, Balasubramanian, & Muthuraj (2013) in their study also concluded that Users usually come to OPAC when they want to search the required materials on the topic of their interest. In this process, OPAC, as a retrieval tool, plays an important role for finding out the required documents, and this has increased their information, retrieval rate especially in locating books and other reading materials in the library.

From the discussion above, most libraries adopting the use of online public access catalogue found in developed countries of the world. While in developing country context a very few libraries are provided with online public access catalogue despite the important roles OPAC plays for effective retrieval information resource in the libraries. This show that a gap exists in the application and adopting the use of online public access catalogues in developing country like Nigeria.

In conclusion the success of OPAC implementation in the university library also depends greatly on the extent to which users are kept well informed about OPAC and be trained to equip them with requisite skills so that they can understand, accept and make more effective use of OPAC services. Therefore, optimum utilization of OPAC can be achieved by well-designed training programme, effective marketing strategy and improved accessibility to OPAC terminals.

## **2.4 Awareness of online public access catalogue**

The term awareness is defined by Encarta dictionary (2009) simply means having knowledge of the existence of something, or having knowledge of something from having observed it or been told about it. Therefore, OPAC awareness can be described as a state of being knowledgeable about the availability of OPAC in an establishment. Human perception and information processing (2015) also defined awareness as the ability of a person to discriminate among several possible stimuli; it enables the person to make right judgement and decision as well as attain a high level of performance. Awareness and perception are two coins that affect the judgement and action of any individual. Perception is the process of recognizing, organizing and interpreting sensory information, it deals with the human senses and generates signals from the environment through five sense organs: sight hearing touch smell and taste.

Awareness refers to the cognitive ability of a person to notice, decipher and judge a given phenomenon. It refers to the knowledge about an object or event, the competencies or skill as well as the methods of operation; it has to do with background knowledge about something eg object, event or any other phenomenon (Reinhard, Mterzko, Sloep & Drachsler (2015).

Nisha & Naushad (2011) described awareness of OPAC as the degree of user knowledge and availability of the service and the extent made use of them. Awareness of OPAC can also be described as having a knowledge of the existence, benefits and purpose of OPAC, though the level of awareness vary from one user to another. Furthermore, Nisha & Naushad (2011) in their studies conducted at the Indian Institute of Technology, Delhi, in regards to awareness about OPAC analysis of the study showed that 75 percent of respondents were aware about the OPAC through the intranet while 25 percent were not at all aware. Setting up OPAC without the target users being sensitized about the purpose, functions and benefits can be considered a waste of resources. Thus, the need for proper

training and sensitization sessions for the target library users is very pertinent. OPAC awareness can be created through library orientation, seminars, workshops, conferences, notice boards, university Website, library Website, library bulletin and university bulletin.

Furthermore, Ruzgea (2012) in his study usability of OPAC interface features, described awareness of OPAC as the knowledge of the facility and it is also a first step to increase usage of library information resources to aid students in their learning process. The study found that (100%) of the respondents were aware of OPAC interface. He also described awareness of OPAC as knowledge of it and maintains that it is also a first step to increased usage (usability) of the literature materials and other relevant information in library and outside libraries or online databases to aid students in their learning process. Furthermore, Fabunmi & Asubiojo (2013) studied awareness and use of OPAC by students of Obafemi Awolowo University, Nigeria. The findings revealed that 68.7% of the respondents were aware of OPAC while the remaining percentage of the respondents used manual catalogue to access library resources due to lack of awareness, lack of skill and problems encountered during the usage.

Ansar & Amita (2008) studied on awareness and use of the online public access catalogue in five Delhi libraries found that a high percentage of respondents are utilizing the OPAC as a search tool for retrieving documents. In another study conducted by Gohain (2013) on the use and user satisfaction on Online Public Access Catalogue services which reported that (72.05 percent) of respondents were aware of OPAC and that (51.03 percent) of respondents consulted the online catalogue on daily basis.

Similarly, Kumar & Vohra (2011) studied on faculty member awareness and use of OPACs. The findings from the study revealed that out of 190 respondents 79 used the OPAC very frequently.

Majority of the respondents (111) used the OPAC occasionally, rarely or were not even aware of it. Problems associated with OPAC usage or non – usage were found to be associated with lack of knowledge; complicated or confusing to use; no out / null retrieval; lack of assistance from library staff; slow speed and lack of computer systems. On the aspect of satisfaction with OPAC usage, only 151 out of 190 respondents indicated their satisfaction level. While 39 were fully satisfied/satisfied; 53 were moderately satisfied and 59 were either dissatisfied or very dissatisfied.

Furthermore, Yusuf (2012) studied on the effective use of OPAC at the Lagos State Polytechnic Library, Ikorodu found that the majority (91.14 percent) of the respondents used OPAC to retrieve materials in the library while (8.86 percent) of respondents did not use OPAC to access library information resources. Such improvement is partly due to increased awareness campaign, adequate number of access points and proper user education programme to users on the use of OPAC for retrieval of books and other information sources. This finding has indication that some higher institution have step up awareness campaign while some are still lagging behind.

Also Studies by, Itunu, Onoyeyan & Aluko-Aruwolo (2014) studied investigated the awareness and use of Online Public Access Catalogue (OPAC) by Faculty Members of Babcock University, Nigeria. The study adopted descriptive survey research design. Questionnaire was distributed to 240 (60%) faculty members at various schools in August 2013 during the annual colloquium workshop. One hundred and nine-six (196) copies of the questionnaire was retrieved and used for the study. Data collected were analyzed using percentage and frequency. The findings revealed that majority of the respondents (71.4%) were not aware that OPAC can be used to retrieve materials before coming to the library. Also, 65.8% of the respondents were not aware that they can access/browse Babcock University library web-based OPAC with their mobile phones before coming to the library to borrow materials; while, 59.2%

of the respondents were not aware that the materials available in Babcock University library can be accessed outside the library building. Only 26% of the respondents used OPAC independently to retrieve library information resources. Majority of the respondents retrieved library information resources by perusing through the shelves and seeking the assistance of library staff. It was obvious from the findings that majority of the respondents were not aware of the OPAC hence the need for the study.

Similarly, study conducted by Ebiwolate (2010) on the use of library catalogue by undergraduate students which revealed that majority of students was not aware of library catalogue as a result they had never used the catalogue. The study further revealed that, due to limited use of OPAC majority of students resorted to browse through shelves technique to locate books which resulted to frustration and thus militated against the use of library information resources.

In a Similar, study by Onuoha, Umahi & Bamidele (2014) revealed that majority of respondents (71.4 percent) were not aware that OPAC can be used to facilitate retrieval of library information resources and thus only (26 percent) of the respondents used OPAC independently to retrieve library information resources. Likewise, Adedibu (2008) examined catalogue use by science students and showed that the users of the OPAC represented a small portion with 33 respondents (7.9 percent).

Furthermore, Namugera (2014) studied on examining the level of awareness and use of OPAC by distance learners at the Open University of Tanzania. The findings revealed that the use of OPAC by distance learners was very low. The main reasons for this state of affairs was due to low awareness of OPAC, inadequate searching skills, recurrent power outages, limited access to computers and low bandwidth

From above discussion in Nigerian perspective, awareness and use of OPAC seemed to be a vague in most libraries. This claim may not be far from the fact that most libraries used unstable software that is managed by unskilled staff. Other issues may be erratic power supply and insufficient fund to support automation project.

There is need to find out whether or not undergraduates in Nigerian federal University Libraries are aware of their universities' libraries' OPACs, whether or not they make use of them and whether or not their OPAC awareness affects their OPAC use.

## **2.5 Accessibility to Online Public Access Catalogue**

Access linked undergraduate students with OPAC in the federal University Libraries to browse and retrieve needed information they required. Accessibility to OPAC is very significance because without access to OPAC there can be no use of OPAC by the users. Access and use of online public access catalogue implies both of the availability and access of OPAC, because the willingness and the ability of the students to access and use OPAC in the University Libraries to retrieve their information need depend on the availability of OPAC in the library. Therefore, OPACs have been the most prevalent information retrieval systems to the general public.

To get access to and use the OPAC, undergraduate students are usually required to present their library registration cards and in some cases, university registration cards. This implies that, such students must be duly registered in the university and its library. It is often generally presumed that, awareness promotes use. This is to say that, a system or resource cannot be used by someone who does not have any prior knowledge of it, that's why awareness should become first thing to be considered followed by accessibility. When implementing a computerized library system one of the main questions is that how many terminals the library should have. A card catalogue is divided into many file drawers and the users rarely have to wait for access the desired section. However, in an online system the entire catalogue is

accessible through terminals, each of which only one person can use at a time. Librarians must make decisions relating to the number of terminals that will be provided for library users, because overestimating the number of terminals will obviously increase costs; however, underestimating will increase queue time and at the same time decrease user satisfaction.

The above uncertainty lead OCLC's Office of research a proposed study to develop and test a model to estimate the number of terminals required in an online public access catalogue. The research was conducted at Ohio State University Libraries during the winter quarter of 2010, a date chosen because that was the peak activity during the academic year. Tolle, Sanders & Kaske (2011) used queuing models for a given service rate and arrival rate to predict the number of terminals needed. The study showed that users arrived at the online catalogue at the rate of 600 per hour, which meant that the service time was 30 seconds. It was concluded that 90 percent of online catalogue users should have to wait no longer than one minute for a terminal. The terminal requirements were based on the traffic intensity (which is the ratio of arrival rate to service rate) and service rate.

According to Taylor (2013) in his study noted three independent variables play a significant role in determining the number of terminals required in the library. First, the rate of users arriving at the catalogue; second, an average user's use of the OPAC services; and third, the service policies of the library, however, in their work Sarika, Singh & Rupali (2012) opined that OPAC is an essential interface for providing access to bibliographic information. It plays an important role in helping students to locate library resources effectively. OPAC is one of the services that are being provided by the modern libraries. Therefore, it's important that librarian need to think carefully about how to further develop the OPAC and provided effective services to users.

From the above discussion it can be seen that provision of enough number of terminal will lead to the increasing access to OPAC by users in the university library. Hence insufficient number of terminal can

cause delay because of long queuing that users has to follow before they got time to access online catalogue.

Luis, Jese & Felix (2007) in their found out that users have more access points with the OPAC in comparison to the card catalogue, example., standard numbers like ISBN and ISSN; keywords, etc. Almost every single part of the bibliographic record is accessible through keyword searching; this capability helps users find data contained in notes, including contents notes. Right now, most OPACs provide Author, Title, Author/Title, Subject Heading, Call Numbers, ISBN, ISSN and Keywords, etc., access points. Luis, Jese & Felix (2007) stated that number of academic libraries' OPACs also provide other access points, example., government document numbers, music numbers, reserved book lists by courses or by instructors, etc. Users can broaden up or narrow down their search through the use of Boolean operators OR, AND, and NOT in the OPACs. They also can limit search results by language, date of publication and type of document but these facilities are not available in card catalogue.

Similarly, Husain, & Ansari (2006), in their work titled From Card Catalogues to Web OPACs, remarked that OPAC have enhanced usability over traditional card format because:

1. The online catalogue does not need to be sorted statically; the user can choose author, title, keyword, or systematic order dynamically.
2. Most online catalogues allow searching for any word in a title, or other field, increasing the way to find a record.
3. Many online catalogues allows links between several variants of an author's name.
4. The elimination of paper cards has made the information more accessible to many people with disabilities, such as the visually impaired, wheelchair users, and those who suffer from mold allergies or other paper or building related problems.
5. Physical storage space is considerably reduced.
6. Updates are significantly more efficient.

## **2.6 Use of Online Public Access Catalogue**

Bowman (2013) described that the use of OPACs first appeared in the UK in 1981 then it quickly spread, chiefly in academic, but also in public libraries. Search facilities were initially fairly limited, being restricted to index keys of fixed length, mainly because of the expense of disk storage, and these OPACs were most suitable for searching a known item, by the user. Keyword and Author searching followed, together with the use of Boolean operators, and Keyword quickly established itself as an alternative to structured subject headings. Some libraries adopted touch-screen terminals. User reactions are hard to find, though several libraries, including Hertfordshire County, conducted surveys; most users seemed to have found OPACs to be an improvement.

Similarly, Yusuf & Iwu (2010) established a statistical study at Covenant University on why the students utilize online public access catalogue more than the manual catalogue. They noted that students can access information through OPAC when they require research material or information on the topic of their interest. However, they observed that search process in OPAC has more or less remained the same, as in the card catalogue but with increased access points, varieties of search features and increased complexity of the process. The use of OPAC by student has increased their information, retrieval rate especially in locating books and other reading materials in the library. This is evident to make initiatives to upgrade their information technology and computerized systems to render better services to the end user community.

In addition, Adeleke (2015) studied the use of library resources by Academic staff asserted that library must not only provide the OPAC services to their users but also make sure effective use of OPAC by its clientele, the success of OPAC utilization in the university library depends not only on how well it works but also on how well it is use by users to retrieve information resources by intended users which is reflected in users attitude toward OPAC use in the federal University Libraries. Furthermore,

Ogunniyi & Efosa (2010) also studied online catalogue use by students of Adeyemi College of Education, Ondo the findings revealed the problem of catalogue use is associated with lack of knowledge on how to use the library catalogue as indicated by majority of the respondents 211(52.7%). There the results of the study reveal that a significant number of users search information regarding the library material through OPAC despite encountering problems.

Similarly, Mulla and Chandra Shekara (2009) studied the effective use of Online Public Access Catalogue at the libraries of Engineering Colleges in Karnataka (India), 1338 questionnaire was received for analysis. The findings revealed that 1092 (81.61%) of the respondents were using OPAC, while 246(18.39%) of the respondents were not using this facility. Among them 662 were undergraduates, 328 were faculty members and 81 were postgraduates, the remaining 21 respondent were researchers. The study established that major constraints for the use of OPAC at the libraries of engineering colleges were lack of awareness; non-user friendly and information technology (IT) competency among user communities

However, Morupisi & Mooko (2006) carried out a study on utilization of the OPAC at the University of Botswana. The study reveal that that the users faced common problems in using the OPAC that included typographical errors, spelling difficulties, appropriate search terms, search strategies and others. However, they were comfortable using author, keyword, title and subject strategies but they had to improve their subject search skills and the advanced searching techniques.

More so, Adigun, Salvador, Abdulazeez, & Babatunde (2011) conducted a study on Assessment of OPAC Utilization in two Selected University Libraries in Lagos State. The study revealed that, there is the need to train the users on how to acquire basic skills in searching as well as offering necessary assistance on the use of the OPAC by the library staff. This can be achieved through proper training

workshops as well as orientation programmes. Libraries should also make provision for an up to date library guides explaining how to use the OPAC and other library services.

Similarly, study was conducted by Oduwole (2002) based on the questionnaire survey method for use of OPAC by 286 users at a Nigerian University found that the OPAC was used, mostly for self search rather than for delegated search with the author as major (59%) access point followed by subject (30.8 %) and large majority were found very satisfied (75%) with the OPAC. Extensive review of past OPAC use studies is neither feasible nor desirable. However, the conclusion was drawn comprehensively.

A study by Ariyapala & Edzan (2012) at the University of Malaya Library reported that OPAC's user behaviour of foreign postgraduate students; this involved their ability to use OPAC, their knowledge about OPAC, and the reasons for the effective use of OPAC. The results indicated that most of the students from developing countries possess various levels of OPAC use abilities. Most of them indicated that there are no OPAC facilities in their home countries, and if available, it is limited to University Libraries. OPAC searches are mainly for title, subject, author/title keyword, and author. Title searches are the most frequently used. Students using the University of Malaya Library indicate that the OPAC is relatively easy to use but students are moderately successful in locating items. Students had to self- train themselves when using the OPAC. Most of them did not receive any training or were taught it from the Library and it was noted that it had been a success only for those who had attended the training programme. Most of the students were generally unaware of other facilities that were available in the OPAC. Sridhar (2004) carried out a comparative study of use of OPAC and card catalogue of the library at ISRO. The study examines for the declining use of OPAC by end-users and the associated problems like the present data highlighting, negligible use of Boolean operators and combination searches, too many records tagged, too broad descriptors, etc. It concludes that, moving

from traditional card catalogue to modern OPAC has not made subject searching, more attractive and effective.

In a similar study by Thomsett-Scott (2007) examined the usability of online catalogues, and found out that catalogues are frequently a major problem for users. He both examined the advantages and disadvantages of incorporating competitive usability into a usability study of the OPAC at the University of North Texas Libraries.

Furthermore, the study by Adedibu (2008) at the University of Ilorin investigates OPAC use by science students. A questionnaire was randomly distributed to 500 users in the 2004/ 2005 session; the preponderance of the respondents (90.1%) used the online catalogue to access the library stock; three-quarter (74%) claimed to know, how to use both the card catalogue and the OPAC. The users of the OPAC represented a small portion with 33 respondents (7.9%). The study also showed that many respondents (192 or 46.3%) preferred the Subject catalogue, one fourth (111 or 26.7%) preferred the Author/Title and about a fifth (88 or 21.2%) preferred a combination of Author/Title and Subject catalogues. The use of library catalogue increases as the respondent's progress in their academic career. The paper concluded that the effective "Library User Education" based on subject would be more beneficial to the users.

Similarly, Harris (2008) considered the usefulness of OPAC to library users. It was suggested that OPACs should be more user- friendly and the study outlines several ways in which the available library catalogues can be made more accessible. These included translating catalogue data into terms that the library user understands, making books more easily accessible via OPACs, and fostering a sense of community around library collections.

On the other hand, Onuoha, Umahi & Bamidele (2013) examined the use of OPAC among final year students in Redeemer's University (RUN) and University of Agriculture

Abeokuta (UNAAB), Nigeria. Findings from their study revealed poor OPAC utilization among the respondents. Most of the respondents 75.38% and 49.55% from RUN and UNAAB respectively indicated that they do not use OPAC at all. The study indicated that problem of inadequate computer and lack of orientation were found to be the reason for none use of OPAC in the two universities.

Arshad, & Shafique (2012) conducted a studied on what do users prefer, card catalogue or OPAC? And have identified obstacles that constrain effective use of OPAC. These factors are lack of awareness, inadequate IT skills, erratic power supply, network failure, inadequacy of computer terminals and searching library materials in oriental languages such as Urdu, Persian and so forth. On the other hand, studies have revealed that the use of OPACs is current increasingly important worldwide and many University Libraries have embraced OPACs as the potential information retrieval tool.

Base on the discussion above the University Libraries should endeavour to have OPACs designed in simple ways that would ensure less complexities, in order to encourage use and University Libraries should also ensure that students are adequately trained to make maximum use of the OPAC as most challenges associated with the use of OPAC often have to do with lack of Knowledge on how to utilize it.

Therefore, use of OPAC can be seen as the extent to which undergraduate students patronize and utilize the available OPAC of the university library, likewise in this context, use in meant to describe the extent to which the library resources are exploited or utilized by undergraduate students. Provision of OPAC makes the library resources to be easily accessible by users. Positive attitude of undergraduate students toward the use of OPAC lead to users satisfaction.

This shows that users are finding it difficult to use OPAC because they don't have knowledge and skills on how they operate it. So the OPAC has to be designed to cater to a wide range of users, ranging from users who have little knowledge of what a catalogue contains and have little experience with computer terminals to librarians who are experienced in online database searching and who require the system to have powerful search capabilities. However, it is evidence from the review that few research studies exist on access and use of OPAC by undergraduate students. Therefore, there is need for a study that will give more insight on the access and use of OPAC by undergraduate students.

In conclusion from the discussion above indicated that nowadays search and retrieval of library materials has become easy due to OPAC. But it has been observed in some instances, that users are not coping with this change. There seems to be two reasons for this; firstly, some users lack computer knowledge and hence are reluctant to accept the change and secondly, the designs of the interfaces of some systems are not user friendly. Due to the increase in technology, designers in user-interface industry compete in making different designs to allow ease-of-use of these interfaces so that users can have access to information they need. Yet, most of the designs of OPACs' interfaces are not that much effective in helping the users during their search for information. Some interface designs in University Libraries' OPACs are less user-friendly and would not allow interactivity with the user during search sessions rendered them less effective, inefficient and bring low satisfaction on users.

## **2.6 Attitude of Users toward the Use of Online Public Access Catalogue**

Attitude is an important variable to consider in the study of human behaviour and vital concept in the use of libraries' OPAC by undergraduate students. The term attitude has been defined in many ways by different scholars. Fisher (2012) stated that the concept of attitude has more definition than any other concepts in social psychology. Fishbein & Ajzen (2009) observed that the term is characterized by an embracing degree of ambiguity and confusion. Attitude is further defined as an accumulation of

information about an object, person, situation, or experience or predisposition to act in a positive or negative way towards some objects. Allport (2015) defined attitude as a mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects with which it is related. In the same vein, Rebeaux & Proppeleton (2013) defined attitude as providing a state of readiness or tendency to respond in a particular way. In addition Keil (2012) believe attitude is a positive or negative feeling that an individual hold about objects, persons, ideas which are generally regarded as enduring through modification by experience or persuasion and as learned rather than innate. Attitude people hold on can profoundly influence the way they act which is very important in determining change, consequently attitude are seen to be dynamic in nature and under constant change as they interact with behaviour. Depending on whether attitude is positive or negative they influence to attend, respond, value, participate and make a commitment to use an object (OPAC). This statement or observation is important because the attitude of library users toward OPAC is has great relationship with how effective they are using it in the library. Dutton (2012) said that the skills required to maximize the potentials of OPAC are much greater than those require using printed catalogue or card catalogue. These skills include knowledge of computer and searching strategies.

Attitude is an important variable to consider in the study of human behaviour and vital concept in the use of libraries' online public access catalogue by UG students. Attitude, as a hypothetical construct, represents individual's likes or dislike for an item. Issa, Bashorun; M'bashir, & Adewusi (2012) Maintained that:

Attitudes are enduring systems of positive or negative evaluations, emotional feeling and tendencies with respect to social objects. Attitude can be described as settled behaviour or manner of acting, as representation of feeling or opinion. It refers to certain predisposition to act or react in a positive or negative way towards certain situations and ideas. Reactions can be pre-conceived notions, ideas, fears, convictions etc. Behavioural scientists have given high importance to the study of human beings and his

surroundings in the context of attitude. They also concluded that attitude is an important variable to consider in the study of human behaviour and vital concept in the use of libraries' OPAC by undergraduate students. Attitude, as a hypothetical construct, represents individual's likes or dislike for an item (p.122)

Attitudes are enduring patterns of believed to be predictive of behaviour, reflecting people's biases, inclinations or tendencies that influence their response to situations, activities, people or programme goals, Students varied in their information needs and seeking attitudes. They constitute a part of society that is fortunate to have access at little or no cost to themselves a variety of automation services in their institutions' libraries. This is made possible because universities use considerable proportions of their budget to provide OPAC for their students in other to help them in knowing the availabilities of information resources in their research processes, quick and easy access to information retrieval.

Attitude is the positive or negative evaluation of object, people, or situation that predisposes to feel and behave toward them in positive or negative ways. Similarly, Anastasi (1990) defines as a "tendency to react favourably or unfavourably towards a designated class of stimuli. An individual's attitude towards an object or issue can be deduced from his behaviour in situations involving that object. If a person has negative attitude towards an issue, the expected outcome is unpleasant feeling. Furthermore, Ukachi, Onuoha & Nwachukwu, (2014) posited that in objective terms, the concept of attitude may connote response consistency with regard to certain categories of stimuli. In actual practice, the term was frequently associated with social stimuli and with emotionally toned responses. Although a great variety of definitions of attitude can be found in the psychological literature, the most frequently occurring features are the positive or negative (affective) tone and the postural characteristics, that is, always predisposes its holder to one posture or the other.

Above literature shows that individual's attitude towards an object or issue can be deduced from his behaviour in situations involving that object. If a person has negative attitude towards an issue, the

expected outcome is unpleasant feeling. An individual can be competent and possess all the skills required to effectively utilize OPAC but fails to do so because of lack of desire resulting possibly from the person's perception or belief about the OPC. In line with the above Babalola & Olapegba (2005) acknowledged that most attitudes are results of observational learning from the environment. Therefore, this implies that students' attitude may result from observing fellow students being frustrated in the search for information using the electronic medium. Loewenstein (2012) professed that attitude could be positive, negative or neutral view or behaviours of a person. The implication here is that, if a person has negative attitude towards the use of OPAC, the expected outcome is already known. He will either not utilize it at all or utilize it just once in a while.

Therefore, undergraduate students may be competent about OPAC but may lack the desire to use it. However, the characteristics of the undergraduate students like personality, past experiences, values, habits, needs may all influence their attitude on the use of online catalogue. Furthermore, Safdar, Mahmood & Qutab (2010) carried out a study to find out the frequency of OPAC use by college students, reasons for using the OPAC and attitude of students towards the using OPAC. The findings revealed that the students have positive attitude towards the use of the OPAC with a mean score of 3.82. 68 % of parents and 69 % of teachers said that they have seen higher grades in their students' results because of OPAC use.

Similarly, Tella (2004) opined that attitude develops as a result of perception and that attitude also affects perception. An attitude is a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols (Hogg and Vaughan 2005). Attitudes structure can be described in terms of three components as follows:

- Affective component: this involves a person's feelings or emotions about the attitude object. For example: "I am scared of spiders";

- Behavioural (or cognitive) component: the way the attitude we have influences how we act or behave. For example: “I will avoid spiders and scream if I see one”; and
- Cognitive component: this involves a person’s belief or knowledge about an attitude object. For example: “I believe spiders are dangerous”. This model is known as the ABC model of attitudes (McLeod, 2014: 34).

Francis & Emmanuel (2015) stated that, Attitude is psychological and represents one's mood or behaviour towards situations around him or her. It is the way and manner in which people react to certain issues in the society. Its' nature is located within the affective domain of any individual's learning. Attitude is an innate feeling, transferred to the outer world in a persistent and obvious way. It is a re-enactment of pre-conceived thoughts in relation to immediate environment. Attitude is a perceived interpretation of someone's atmosphere which could be right or wrong to other individuals. Attitude is an observable trait, which could be interpreted differently by various observers at a particular time and under a particular condition.

The success of any library system depends not only on how well the design works on paper, but on how readily people will accept it, how effectively they can use it. Due to the fact that, it is the users of the library that embrace or reject the new technologies; fulfil or frustrate the intentions of system designers and experience anxiety and disorientation as a result of their use. Therefore, one of the major barriers in implementing new innovations in libraries is not only technical but also attitudinal, as positive attitude towards OPAC service contributes to the better performance in a technologically advanced environment. However, not much is known about students' attitudes towards OPAC services in their institutions' libraries and without a better understanding, it remains difficult for these libraries to effectively provide these services to their users (Rajagopal & Chinasamy 2014).

The Council on Library Resources (CLR) funded research on users' assessment on online catalogue, it was said that 80 percent of the users of online catalogue reported satisfaction while 84percent said this

is what they were looking for, and study found that most of the patrons were highly satisfied with the system OPAC (Moore, 2006).

Moore (2006) also summarized why library users accept online catalogues.

- a) They are more easy to use than the card catalogue;
- b) Searching with an online catalogue can save time;
- c) Online catalogue provide new informational services such as location of the items required.

Base on the above discussion, one can understood that attitude is a psychological representation of one's mood or behaviour towards a situation around him. if we can have some judgement about the attitude of an individual towards a specific thing or activity then we can have a fair idea as to whether the individual can be persuaded to participate in a particular thing or activity and whether he shall adopt it with interest and sincerity or not. Therefore, the characteristics of the undergraduate students like personally, past experiences, values, habits, needs may all influence their attitude toward the use of online public access catalogue to retrieve library materials.

However, since users' attitude is a vital factor, it was thought appropriate to conduct a study of undergraduate students' attitude towards the use of OPACs in University Libraries. Therefore, this study has been designed. From the discussion above, the researcher observed that there have been scanty studies on undergraduate students' attitude toward the use of OPAC. The study intends to fill the gap in finding out whether undergraduate students' attitude affects their use of OPAC or not.

## **2.8 Factors facilitating the Use of Online Public Access Catalogue**

There are five factors identified in facilitating the use of online public access catalogue which has been discussed by different scholars with different point of view regarding the use of OPAC in the University Libraries as follows:

**1. OPAC Awareness:** In order to satisfy user's community's each University Libraries should provide different types of services to make users aware and better utilization of its resources. Because OPAC is one of these services which help library users to locate and access its resources easily. University Libraries should conduct various user awareness programmes at the beginning of each academic session for students on how to use OPAC facility to enable them acquire basic skills to search OPAC. Asokan & Dhanavandan (2015) stated that the main aim of OPAC is to encourage wider access to library holdings, and to accomplish this aim, the University Libraries should provide OPAC awareness and use policies to encourage high level of OPAC use among undergraduate students, such as inclusion of practical-based introduction to OPAC as one of the topics in the use of library courses and giving assignments that will necessitate their use of OPAC, all this should be formulated and implemented by universities. Moreover, continuous and far-reaching awareness programmes such as sensitization of students and faculties, orientation, campus radio jingles, billboards, banners and handbills should be sustained to further improve undergraduates' awareness of OPAC. This will subsequently lead to increased use of it.

**2. Information searching skills:** To improve information searching skills among students a sessions of training or workshops should be organized to teach users about OPAC so as to facilitate its effective use. Veena, Mallaiah & Pushpalatha (2015) maintained that, training and re-training on the use of OPAC should be carried out regularly in order to heighten the awareness of the user in regard to search techniques, which may help the users in developing sophisticated searching and retrieval skills or techniques. Similarly, Thanuskodi (2012) carried out a study on the Use of Online Public Access Catalogue at Annamalai University Library, he pointed out that University Libraries have to organized seminars and workshops to students on Searching skills. The study also suggested that University library should organize user education programmes on the use of different techniques and strategies in retrieving information about the documents.

**3. Increase number of OPAC terminal:** Online Public Access Catalogue has always been the most suitable tool to retrieve the library collection by the end users in order to utilize the materials according to their specific needs. Being able to complete the retrieval effectively has often represented a complicated task to be accomplished by the end users. The critical challenge faced by libraries is to provide the end users with the right information and materials to fulfil their information needs effectively and efficiently. Without the usage of OPAC some important information or materials could be left out and lead the end users to unnecessary materials instead. Borgman (2011) affirm that sufficient number of OPAC terminals increase level of utilization of online catalogue. Furthermore, Zainal & Hussin (2014) in their study mention some strategies for improving OPAC use by the undergraduate students include giving them more orientation on the use OPAC, provision of more computers terminal in the University Libraries, provision of constant power supply.

**4. Assistance of library staff at OPAC terminal:** there is need to provide a library staff near OPAC terminals for optimum utilization of the service that will assists and guide students on how to search OPAC; this will encourage the students to use OPAC facilities in the University Libraries. Shivakumaraswamy, & Narendra (2016) conducted a research on use and users' satisfaction on Online Public Access Catalogue (OPAC) Services in B G S Institute of Technology Libraries Nagara, Nagamangla. The study is an attempt to know the use of online public access catalogue by the users. The study revealed that the tool is useful and at the same time respondents felt that there must be someone near the OPAC to help in retrieving the required documents. Examines the utilization and satisfaction of users about OPAC and highlights the suggestions made by the users for the further improvement. To improve the use of OPAC, (Kaur & Sharda, 2010) strongly advocated that librarians should assist users in learning how to search OPAC.

**5. Constant power supply:** Provision constant power supply in the libraries will eliminate uninterruptible power supply. It is necessary for University Libraries to consider alternative sources of power supply considering the erratic nature of power supply in Nigeria as this would also help ensuring that the OPAC can be utilized at all times (Nelson 2016).

**6. Orientation programme:** Klaib (2011) reported that library orientation programme conducted in 2008 at Zarqa Private University Jordan revealed that the offered programme had focused more on theoretical rather than the practical aspects.

## **2.8 Challenges associated with the Use of Online Public Access Catalogue**

Despite the fact that OPAC is past and easy for effective and efficient in facilitating access to information retrieval tools. Studies from various scholars have identified the challenges associated with the use of online public access catalogue for retrieving library materials as follows:

**1. Less number of OPAC terminals in the library:** the number of computers system kept at OPAC desk for users to search the available materials held by libraries are not enough for the users, looking at users' population. Norden & Lawrence (2013) stated that insufficient numbers of Public terminal use in online catalogue and other peripheral devices inhibit deployment as challenges to integration of new technologies in Canadian libraries. Similarly, Yusuf (2012) in his study Utilization of Online Public Access Catalogue investigated the reasons why some users are not using the OPAC services. The study shows that majority of the respondents indicate shortage of terminals, OPAC not working properly and systems not near to stock area as reasons for not using the OPAC. They believe that they don't have to queue up in the library because they want to know the where about or existence of information materials. Sometimes the system is not functioning well, at times in the process of checking the OPAC the electricity supply is cut off meaning you have to start all over again. All the

respondents believed that it is time wasting, stressful and uncalled for. The findings of the study revealed lack of orientation on how to use the OPAC with 85.71%. They cannot use it, since they don't know how to use it. This is followed by respondents not getting the books required with 57.14%. Other reasons have 31.42% while access password protected with 22.85% and lastly not aware of the facility with 20% respondents. However, 71.39% of the respondents indicate that they seek assistance from library staff, while 28.61% do not seek assistance from library staff. This shows that library staff rendered assistance to users when necessary.

**2. Lack of skills/knowledge to use OPAC independently:** for user to use OPAC required complex interaction with computer. This implies that library user cannot access and use OPAC without adequate computer skills. Kumar & Ranjana (2011) in their study examined that Lack of basic skills among users was found to be the major reason for not utilizing full features of OPAC. It suggested that University library should organize quality instruction programmes to improve knowledge and skills of the users.

Similarly, Asubiojo & Fabunmi (2013) affirmed that lack of information searching skills; awareness, erratic power supply, network failure and inadequacy of computer terminals designated for the use of OPAC were among the factors inhibiting use of library OPAC. Furthermore, Okon (2015) suggested that the skills required to access the maximum potential of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the database and the instructions which must be input into the computer by the searcher as well as understanding of the ways in which the instructions are linked to one another. Furthermore, Okon asserts that the core skills traditionally associated with information professionals includes information handling skills, training and facilitating skills, evaluation skills and concern for

the customer, are all relevant. Training of users on the use of computers and other related technologies for services in any organization including academic libraries is very important.

**3. Lack of awareness about OPAC:** Mulla & Chandrashekara (2009) established the major constraints for the use of OPAC as lack of awareness between user communities; OPAC software is not user friendly and lack of information technology (IT) competency among user. Awareness in this case may be caused by inability of librarians to notify users about the existence of OPAC. They also highlighted the need for an education programme module for users to promote the effective usage of OPAC. However, Islam (2010) argues that underutilization of library electronic resources and OPAC in particular in the library is mainly attributed to either lack of awareness of that resource, users do not know how to use them or they do not know what resources are being offered.

**4. OPAC access is passworded:** due to the growing number of students that are using OPAC, the University Libraries blocking OPAC with password. Only student with password can be able to use the OPAC. Users are required to provide username and password before they can access the online public access catalogue. Narang & Singh (2013) had stated that the password requirement was one of the hindrances to use OPAC; Students need to be able to use OPAC whenever they need. In the same vein, Enwanta & Nwalo (2013) maintained that a building filled with book and other information resources is not necessarily a library unless those books and resources have been organized for access and made available for use. Therefore, users can come to library to use OPAC to access and retrieve the available materials they need.

**5. Lack of proper guidance on how to use OPAC by library staff:** Since the OPAC system is a new design, university library should get a committed personnel that will assist users where necessary and ensure that it's well functional and operations smoothly without any difficulties. Kumar and Vohra (2011) stressed that problems associated with OPAC usage or non – usage were found to be

associated with lack of assistance from library staff; slow speed and lack of computer systems. Other problems were Lack of basic skills among users was found to be the major reason for not utilizing full features of OPAC.

Umarani, Nagarkar & Jagtap (2008) observed that personal and extended help is possible from library staff to the users to search OPAC effectively within the library. But it becomes difficult to provide such a help to online users. Therefore, it becomes essential to design user friendly OPACs and to test them for usability on a regular basis.

6. **Lack of orientation from library staff:** Lack of orientation from library staff/librarians also constitutes major factor that militate against awareness and use of Babcock University library OPAC. The study therefore recommends that Librarians should organize orientation and sensitization programmes in order to create awareness, and encourage the university community and especially faculty members at various schools to effectively use OPAC to ensure maximum utilization of library information resources (Itunu, Onoyeyan, & Aluko-Arowolo, 2014). Therefore, the University library should organize quality instruction programmes to improve knowledge and skills of the users.
7. **OPAC interface design:** OPAC design is sophisticated to the extent that users find it difficult to understand. Similarly, the technophobia for instance may not allowed the users to use OPAC easily because ordinarily a lot of people they hate having contract with the computer. Olufunmilayo & Adetimirin (2015) cited Wallis & Kroski stating that the difficulty in conducting searches on OPAC and difference in OPAC interface design and library Website interface design as part of factors affecting use of OPAC. Similarly, Omoike & Oke (2014) observed that despite the attention that OPAC is receiving worldwide, little seems to have change. Research studies continue to report that users have great challenges because the design does not incorporate sufficient understanding of searching behaviour. Many of these problems still remains in online catalogue due to the remnants

of the card catalogue in its structure and a failure to design user interfaces based on the knowledge and skills of online catalogue users. Though the online catalogue adds a layer of functionality, it also adds a layer of complexity to the process. Compared to the rich access systems and services of the commercial sector, several aspects of law library services fall short. For example, most libraries OPAC fails to provide information in a helpful way to users.

**8. Erratic power supply:** Lack of steady light can seriously affect the utilization of software. Erratic power supply has been a problem in Nigerian academic and special libraries. This can cause serious breakdown of the system. It can also cause crashing of huge databases.

Nigeria as a developing nation cannot boast of twenty four hours electricity supply to its citizens. Library as central nervous system of learning in the universities where students, researchers and lecturers are feed with information resources is not exempted from the problem of erratic power supply. This has really affected the OPAC use in the library. Unfortunately, it is so sad that all libraries have to power a generator set to be able to get some hour with light, and it is so unfortunate that fuelling such generator set is tasking and fund wanting for the University Libraries (Adomi 2015). This is one of the reasons that most libraries fail to provide effective and reliable services to their patrons due to erratic electricity supply it facing in Nigerian libraries.

**9. Inadequate funding:** In Nigeria, library and information centres are underfunded and as a result many libraries have not been able to provide online public access catalogue system to their users. Ogbole & Morayo (2017) studied Factors Affecting Online Public Access Catalogue Provision and Sustainable use by undergraduates revealed that adequate funds to support OPAC project in libraries, erratic power supply, inadequate training on how to use of library OPAC staff are all factors that affect OPAC sustainable use.

The above listed items have indicated the challenges associated with the use of OPAC in the libraries. Therefore, there is the need for the federal University Libraries to organized orientation and seminar on OPAC use to their user especially undergraduate students who are the most potential users of the library resources.

In conclusion it also recommended that University Libraries should take into cognisant of other problem that have been mentioned by scholars on the above discussion like assistant awareness and guidance to the undergraduate students on how to use online public access catalogue in the library other important things to be consider by the University Libraries include provision of enough computer terminals so that students should not have to queue up on the terminals waiting for other user to finish searching as well as procurement of good standby generator to overcome the uninterrupted power supply in the library.

## **2.10 Theoretical Framework**

Diffusion of Innovation theory (DOT) model was adopted in the process of formulating the research framework for this study. This model was developed by Evers Rogers in the year1962. It was formulated to explain how, why, and at what rate new ideas and technology or new product over time gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behaviour, or product. Rogers (1962) argues that diffusion is the process by which an innovation is communicated over time among the participants in a social system. The origins of the diffusion of innovations theory are varied and span multiple disciplines. While diffusion literature largely covers innovations in industrial and service settings, a good deal of attention has now also been paid to public service and public policy innovations, with considerable emphasis on the diffusion of innovations in the health care and educational fields (Nutley & Davies, 2000).

Rogers proposes that four main elements influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. This process relies heavily on human capital. The innovation also must be widely adopted in order to self-sustain. Within the rate of adoption, there is a point at which an innovation reaches critical mass.

Rogers (1995) points out that diffusion is not a single, all-encompassing theory. It is several theoretical perspectives that relate to the overall concept of diffusion; it is a meta-theory (Yates, 2001). There are four main elements/factors that influence adoption of an innovation (new idea) including:

- The innovation itself.
- The communication channels used to spread information about the innovation.
- Time.
- The nature of the society to whom it is introduced (Rogers, 1995:60).

Rogers (1995) explains that there are four major theories that deal with the diffusion of innovations. These are the innovation-decision process theory, the individual innovativeness theory, the rate of adoption theory, and the theory of perceived attributes

### **1. Innovation-decision process theory**

The innovation-decision process theory is based on time and which involve five distinct stages (Nutley, Davies & Walter 2002). These stages have been identified by Rogers (1995) as follows:

- The first stage is knowledge or awareness of innovation to forming an attitude the innovation. Potential adopters must first learn about the innovation.
- Second, they must be persuaded as to the merits of the innovation, to forms a favourable or unfavourable attitude the innovation.
- Third, they must decide to adopt the innovation.
- Fourth, once they adopt the innovation, they must implement (the new idea) i.e. innovation into use and

- Fifth, they must confirm that their decision to adopt was the appropriate decision. Diffusion results once these stages are achieved (Rogers, 1995:66).

The above distinct stages showed that Knowledge first occurs when a potential systems user is exposed to the existence and functionality of the technology. Then Persuasion is when a user forms an attitude toward the new system (i.e. OPAC). The attitude can be either favourable or unfavourable. The decision step is when a user decided to accept or reject the IS event. Implementation is putting to technology into use. The confirmation step occurs after the technology is in use. The user seeks confirmation and reinforcement of the decision he or she has made.

Another line of research on the acceptance of new technology as examined by Rogers (1983, 2003). This perspective views such factors as individual user characteristics, information sources and communication channels and innovation characteristics as determinants of IT usage and adoption. Rogers (2003) views the diffusion of innovation as “a social process in which subjectively perceived information about a new idea is communicated person to person” (p.117). Communication channels distribute knowledge of the innovation, contribute to the prospective user forming attitudes about the innovation leading to a decision to accept or reject the innovation. Knowledge occurs when a potential systems user is exposed to the existence and functionality of the technology. Persuasion is when a user forms an attitude toward the new system. The attitude can be either favourable or unfavourable. The decision step is when a user decided to accept or reject the IS event. Implementation is putting to technology into use. The confirmation step occurs after the technology is in use. The user seeks confirmation and reinforcement of the decision he or she has made.

Rogers (2003) looks at the process of this theory as a mental process that an individual passes through before adopting or rejecting an innovation. Rogers also affirm that for a new idea to diffuse there must be awareness stage, interest stage, evaluation stage, trial and adoption stage. For proper understanding,

Rogers amended these stages and came out with his own processes which are knowledge, persuasion, decision, implementation, and confirmation stage.

**2. Individual innovativeness theory:** Nutley, Davies & Walter (2002) say the individual innovativeness theory is based on who adopts the innovation and when. A bell-shaped curve is often used to illustrate the percentage of individuals that adopt an innovation. Rogers (1995) also pointed out that as well as the determinants of adoption at the individual level, there are a variety of external or social conditions that may accelerate or slow the diffusion process such as:

- Whether the decision is made collectively, by individuals, or by a central authority.
- The communication channels used to acquire information about an innovation, whether mass media or interpersonal.
- The nature of the social system in which the potential adopters are embedded, its norms, and the degree of interconnectedness.
- The extent of change agents' (advertisers, development agencies, etc.) promotion efforts (Botha and Akin 2002:69).

Of importance is communication, or rather the process where information is both created and shared in order to reach a mutual level of understanding between individuals. This provides the means by which information is transmitted between individuals and social systems creating the communication channel (Rogers & Scott, 1997).

**3. Theory of rate of adoption:** The theory of rate of adoption suggests that the adoption of innovations is best represented by an s-curve on a graph (Nutley, Davies & Walter (2002)). The theory holds that adoption of an innovation grows slowly and gradually in the beginning. It will then have a period of rapid growth that will taper off and become stable and eventually decline (Rogers, 1995). The Bass model suggests other representations (Robert-Ribes & Wing, 2004).

Another aspect of importance is time. Innovations are seen to be communicated across space and through time. Time has been identified as being significant in the diffusion of innovations in three main ways (Rogers & Scott, 1997).

- Firstly, the adoption of an innovation is viewed as a mental process that evolves over time starting and initial awareness and initial knowledge about an innovation which evolves into an attitude towards that innovation. This influences the decision of whether to adopt or reject the innovation.
- Secondly, the rate of adoption amongst individuals differs throughout the social system. This starts off slowly with only a minority of people adopting the innovation increasing over time eventually reaching the rate where enough individuals have adopted the innovation and the rate of adoption becomes self-sustaining.
- Thirdly, time is involved in the rate of adoption or rather the relative speed that members of a social system adopt innovations. This is often measured as the number of members of the system that adopt the innovation in a given time period (Rogers & Scott, 1997:72).

**4. The theory perceived attributes:** The theory perceived attributes is based on the notion that individuals will adopt an innovation if they perceive that the innovation has the following attributes (Nutley, Davies & Walter 2002). First, the innovation must have some relative advantage over an existing innovation or the status quo. Second, it is important the innovation be compatible with existing values and practices. Third, the innovation cannot be too complex. Fourth, the innovation must have trialability. This means the innovation can be tested for a limited time without adoption. Fifth, the innovation must offer observable results (Rogers, 1995).

Rogers (2003) stated that there are five main characteristic that influence adoption of an innovation.

These are:

1. Relative Advantage – The degree to which an innovation is seen as better than the idea, programme, or product it replaces. Therefore, the degree of relative advantage may be measure in economic terms, but social prestige, convenience and satisfaction are also important factors.

It does not matter so much if an innovation has a great deal of objective advantages. What its

matters is whether an individual perceives the innovation as an advantageous. So the greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be.

2. Compatibility – How consistent the innovation is with existing values, passed experiences, and needs of the potential adopters. An idea that is incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation that is compatible.
3. Complexity – This is the degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.
4. Triability – Extent to which the innovation can be tested or experimented with before a commitment to adopt is made. New ideas that can be tried on the instalment plan will generally be adopted more quickly than innovation that is not desirable.
5. Observability – The extent to which the innovation provides tangible results. Hence the easier it is for individuals to see the results of innovations; the more likely they are to adopt it. Such visibility stimulates peer discussion of a new idea, as friends and neighbours of adopters often request innovation evaluation information about it.

The above implies that for an innovation such as the OPAC to gain acceptance and also be used by undergraduate students, they must have positive attitude towards its use by way of perceiving it to be better than the printed catalogue. It should be seen to be consistent with the values and needs of the library users and also very easy to use. In other words, students' perception and belief about the usefulness and ease of use of an innovation such as OPAC could motivate them into utilizing them.

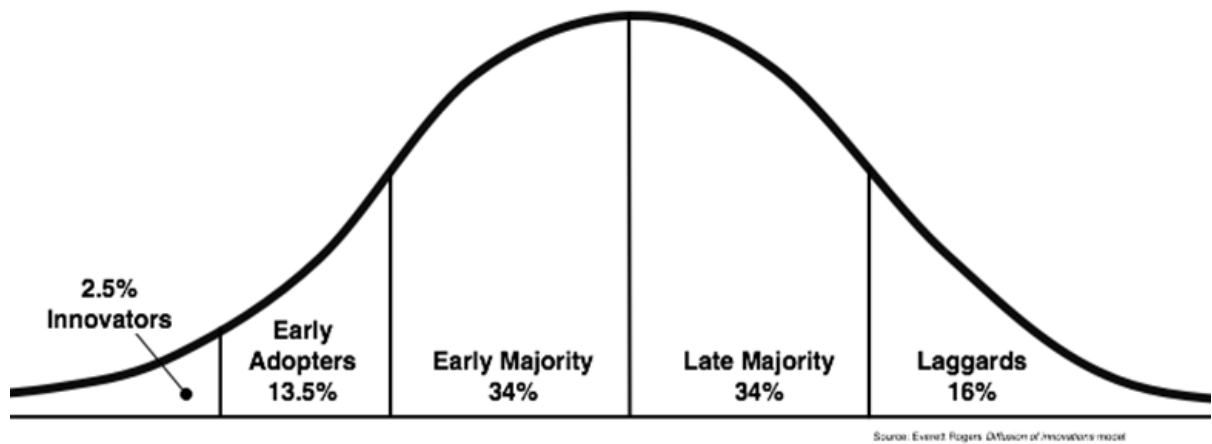
### **2.10.1 Innovation adoption**

Adoption means that a person does something differently than what they had previously (i.e., purchase or use a new product, acquire and perform a new behaviour, etc.). The key to adoption is that the

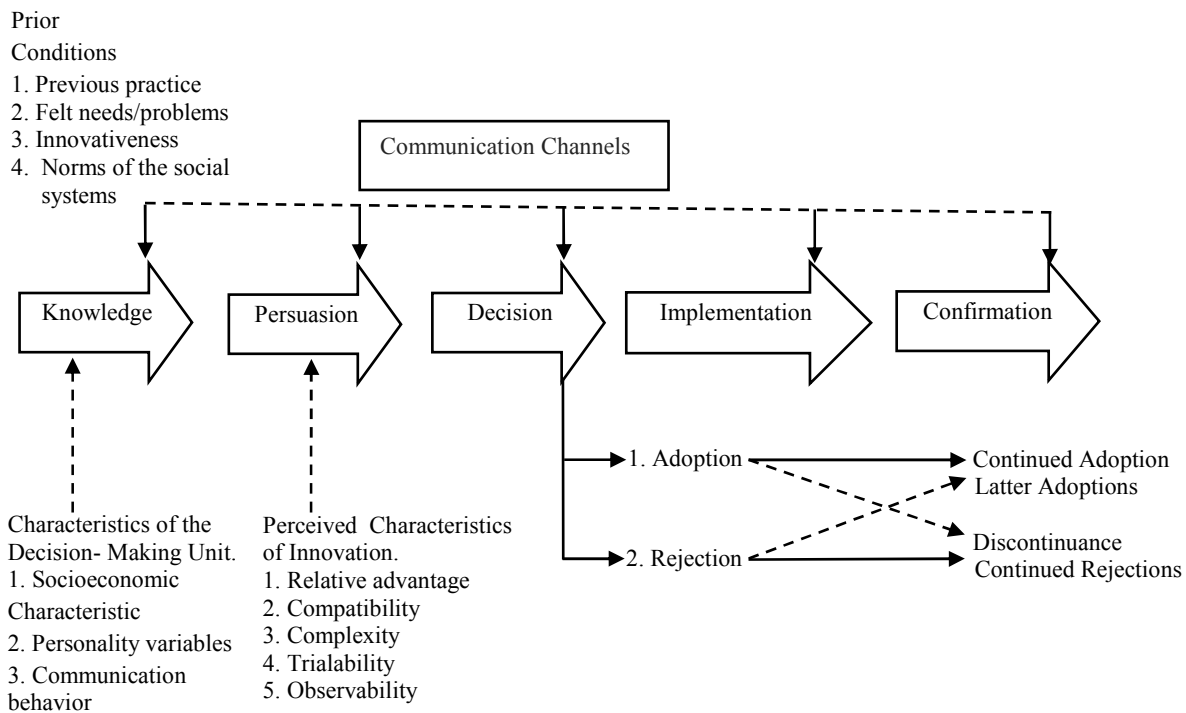
person must perceive the idea, behaviour, or product as new or innovative. It is through this that diffusion is possible.

Adoption of a new idea, behaviour, or product (i.e., "innovation") does not happen simultaneously in a social system; rather it is a process whereby some people are more apt to adopt the innovation than others. Researchers have found that people who adopt an innovation early have different characteristics than people who adopt an innovation later. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. There are five established adopters' categories, and while the majority of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population. When promoting an innovation, there are different strategies used to appeal to the different adopter categories.

According to Rogers (1983) adopter groups are identified as Innovators, Early Adopters, Early Majority, Late Majority and Laggards or non adopters.- These people are bound by tradition and very conservative. They are very skeptical of change and are the hardest group to bring on board. Strategies to appeal to this population include statistics, fear appeals, and pressure from people in the other adopter groups.



**Figure: 1 The Innovation adoption and diffusion of innovation process.**



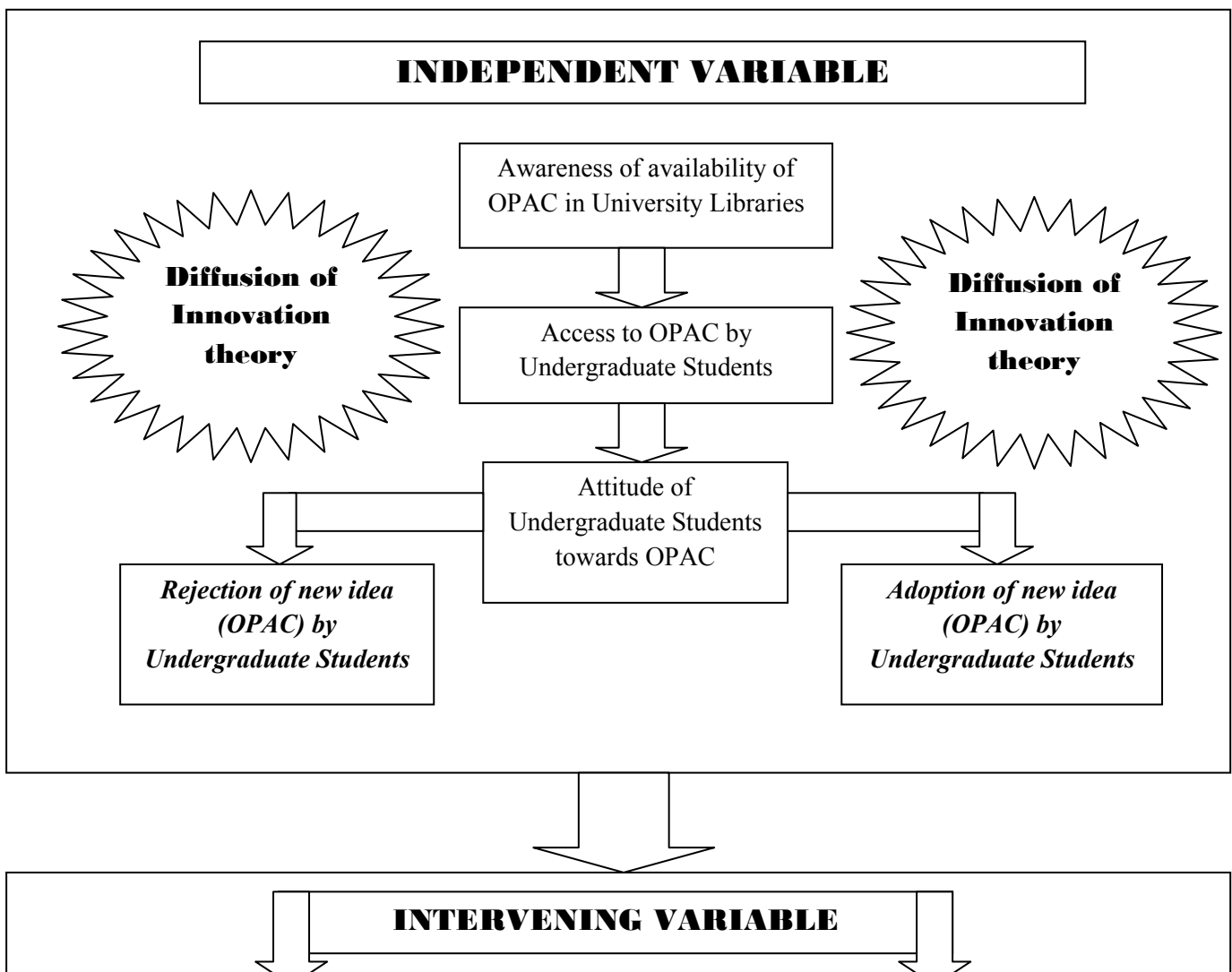
**Figure: 2 The five stages in the innovation-decisions process.**

The diffusion of innovation theory focused on the five elements which lead to the adoption of new idea as follow:

- Firstly, the characteristics of the innovation it self which may influence its adoption. This also incude another five stages relative advantage, compatibility, complexity, trialability and observability.
- Secondly, the decision making process that occurs when individuals consider adopting of a new idea, product or practice.
- Thirdly, the characteristics of individuals that make them likely to adopt an innovation.
- Fourth, the consequences of an individuals and society of adopting an innovation and
- Lastly, communication channels used in the adoption process, example mass media chanel.

## 2.11 Conceptual Framework

Base on the variables of the research topic the researcher build his conceptual framework using the Diffusion of Innovation theory for the adoption of new technology that is online public access catalogue OPAC, and additional variables found in the literature reviewed on undergraduate students' attitude toward the use of online public access catalogue, which they include: awareness, access, use, factors facilitating the use of OPAC and challenges associated with the use of OPAC.



**Figure: 2 The Conceptual Model of the study**

The experience of the utilization of manual cataloguing system and the effectiveness of the advance use of OPAC lead the researcher to find out the attitude of undergraduate students towards the utilization of the new innovation. The researcher used the constructs of the Diffusion of Innovation Theory to derive a conceptual Framework for the study. The conceptual model for Undergraduate Students' Attitude towards the Use of Online Public Access Catalogue in Federal University Libraries in North West States of Nigeria is composed of three (3) major components with eight (8) sub-components. A detail of each component is provided below:

- **Awareness of availability of OPAC in University Libraries:** This construct of the conceptual model refers to the knowledge of the availability of the online public access catalogue. Firstly, the undergraduate students have to be aware of the OPAC available at the university library. These awareness expose to the undergraduate students the availability, hence they make the decision to either access these innovation.
- **Access to OPAC by Undergraduate Students:** Access as a construct in these study refers to the right to make use of the OPAC, so the utilization of OPAC is dependent on the accessibility to OPAC which motivate users to use it. In the context of this study access refers to the opportunity of undergraduate students to get access to OPAC terminal.
- **Attitude of Undergraduate Students towards OPAC:** This construct in the context of this study refers to the way undergraduate student react to, or their behavioral tendencies towards the new innovation of OPAC as used in the library. This leads to the two construct of the diffusion of Innovation theory of Adoption of new idea (OPAC) by Undergraduate Students and Rejection of new idea (OPAC) by Undergraduate Students
  - ***Adoption of new idea (OPAC) by Undergraduate Students:*** Here refer to the fact that if the undergraduate student accepts the innovation, they will then utilize the resources because they feel

it will help them to retrieve the library resources easier than the manual catalogue and reap the dividends of the advantages of the OPAC.

- **Rejection of new idea (OPAC) by Undergraduate Students:** Here refers to the fact that the rejection of the innovation by the undergraduate students leads them to not utilize the resources, maybe because they don't have the skills to operate the OPAC terminal and browse the information resources they are looking for, thereby not able to maximize the potential benefits of the OPAC.

➤ **Use of OPAC by Undergraduate Students:** In the context of this study, this is the culmination of the model. The undergraduate students needs to be aware of the availability of the OPAC and have access to the OPAC, develop a positive attitude towards the OPAC and then utilize the OPAC which involves login to a computer terminals connected to OPAC in order to search and retrieve information resources held in a library.

## 2.12 Summary of the Review

The literature reviewed on the awareness of online public access catalogue scholars like Nisha & Naushad (2011); Ruzegwa, (2012); Asubiojo & Fabunmi (2013); Kumar & Vohra (2011); Ansaar & Amita (2008) & Gohain (2013) in their research found out that users has high level of awareness of online public access catalogue perhaps they are in the developed countries. The finding has indicated that some higher institutions have step up awareness campaign while other are lagging behind. On the other hand researchers like Arshad & Shafique (2012); Yusuf (2012); Itunu, Onoyeyan & Aluko-Aruwolo (2014); Onouha, Umahi & Bamidele (2014) revealed that users are not aware of online public access catalogue because they are developing.

Literatures on access and use of online public access catalogue studies by Ogunniyi & Efosa (2010); Oduwale (2002) Mulla & Chandrashekara (2009); Ariyapala & Edzan (2012) & Adedibu (2008) revealed that significant number of users accessed and searched library materials through OPAC despite encountering problems. Therefore, these studies found to be relevant to the present study. However, it also observed that studies by Onuoha, Umahi & Bamidele (2013); Arshad, & Shafique (2012); and Morupisi & Mooko (2006) have identified some obstacles that constrain effective use of OPAC which includes: lack of awareness, inadequate IT skills, erratic power supply, inadequacy of computer terminals and searching strategies using author, keyword, title and subject, keyword and etc.

Consequently, several studies conducted on Attitudes of user towards OPAC. While reviewing the literature on attitudes of users towards OPAC, many reasons could be adduced for student's preferences to online public access catalogue in University Libraries. Among these includes time saving, students accessed OPAC to supplement notes given by their lecturers, write their class assignments, projects and etc. Undergraduates in Nigeria find online public access catalogues very useful as they help them to have access and retrieved numerous library resources. This has helped them to access relevant information resources. OPAC services have brought into the world a wider source of database for students, and these various opportunities have made the students to be up and about, trying not to be left behind in the latest skills and techniques required for maximum use of these services in Universities for their various academic challenges and objectives.

From the literature reviewed, many researchers have indicated some factor facilitating the use of OPAC in University Libraries especially among the undergraduate students, thus includes: creating OPAC awareness, training users on information searching skills, provision of adequate computers at the

OPAC terminal, as well as rendering assistant by library staff and provision standby generator to overcome uninterrupted power supply problem. Therefore this study is directed to achieve this in order to fill the gap of dearth of studies on Attitude of undergraduate students towards OPAC use in federal University Libraries in North West States of Nigeria.

Finally, study reviewed the challenges associated with use of online public access catalogue. The literature reviewed highlight many problems associated with the use of online public access catalogue which includes: Inadequate computer at OPAC terminal, lack of searching skills by users, lack of awareness, OPAC access is pass worded, lack of assistant and orientation from the library staff, OPAC interface design, erratic power supply and insufficient funding to run the library affairs are among the problems identified in the reviewed.

The researcher also proposed conceptual framework for undergraduate students' attitude toward use of OPAC, to assist for a better understanding of the topic, undergraduate students' attitude towards the use of online public access catalogue OPAC in the federal University Libraries in North West States of Nigeria. However, diffusion of innovation theory was used the theoretical framework of the study in addition to other variables found in the reviewed of the study from the basis of the conceptual framework of the study.

### **2.13 Uniqueness of the Study**

The uniqueness of the study firstly, started from the topic of research because base on the available literature reviewed by the researcher, it can be understood that studies on undergraduate students' attitude towards the use of online public access catalogue (OPAC) in the federal University Libraries specifically in North West States of Nigeria is not done. Another uniqueness of the study is that most of previous researches conducted on OPAC are from Asian countries therefore the geographical location

differed. The conceptual framework for the study also makes study to be unique, as none of the previous studies reviewed by the researcher on OPAC have use diffusion of innovation model.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter described the methods and procedure that were adopted in collecting and analyzing the data by the researcher. It was organized under the following sub-headings: research design, population of the study, sampling technique and sample size, instrument for data collection. Other components discussed were validity and reliability of the instrument and method of data analysis.

A quantitative research method was used in the conduct of this research because want quantify attitudes, opinions and behaviour of individuals on the use of online public access catalogue to generalize the results from a larger sample of the population under study. Furthermore, quantitative method is ideally suit in finding out who, what, when and where. Similarly, quantitative method is often concerned with finding evidence to either support or contradict of an idea or hypothesis you might have. Earl (2010) stressed that Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research methodology also focuses on gathering numerical data and generalizing it across groups of people to explain a particular phenomenon.

In view of the above quantitative research methodology was used by the researcher, because it will help the researcher to gather numerical data collected from the respondents in order to measure

undergraduate student's attitude toward the use of OPAC and challenges associated with OPAC used by undergraduate students of federal University Libraries in North West State of Nigeria. Furthermore, quantitative methodology will also help the researcher in generalizing the findings into reports in order for analysis.

### **3.2 Research Design**

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data (De'Vaus, 2000). In a similar view, Akuezulo & Agu (2003) stated that "research design is the plan for research project which provide guidelines that direct the researcher towards solving the research problem and may vary depending on the nature of the problem being studied". Purposely, the research design is to give a guide to the research work plan for how generated data should be gathered, what particular instruments will be use for the study and how these instruments should be interpreted to answer the research question.

Survey research design was used for the conduct of this study because is very valuable tool for assessing opinions and trends. Aina (2004) asserted that survey research involves a systematic and comprehensive collection of information about the opinions, attitude, feelings, beliefs and behaviours of people on issue through observation, interviewing and administering of questionnaires to a relatively large and representative sample of the population of interest.

In line with the above discussion, the researcher choose survey research design because is one of the most popular research designs used by students of research, practitioners and scholars, which consists of a predetermined set of questions that is given to the representative samples of the larger population of interest. Also because, is simple and cost-effective way to gather data from a sample of a larger population. Furthermore, surveys research design is also useful in describing the characteristics of a

large population, ensures more accurate sample to gather targeted results in which to draw conclusions and make important decisions. Lastly, survey research design allow respondents to maintain their anonymity to provide answer as open and honest as possible than other types of research design especially if it is clearly stated that answers will remain completely confidential. Therefore, in the context of this research, the researcher found survey research design as more appropriate in view of the above advantages for this study because it will enable the researcher to find out undergraduate students' attitude toward the use of OPAC in the federal University Libraries of North West States of Nigeria.

A cross-sectional type of survey was used in this research because it involves drawing a sample of the population of interest, which led the design to be useful in describing the characteristics of a large population and makes use of large samples, thus making the results statistically significant when analyzing multiple variables; the design also allows use of various methods of data collection such as questionnaire, structured and unstructured interviews.

### **3.3 Research Setting**

North West states of Nigeria were made up of seven (7) states which include: Kaduna; Kano; Katsina; Kebbi; Jigawa; Sokoto and Zamfara States. These seven states were formed from parts of the old Northern region. The North West States are among of the biggest and highly populated areas in Nigeria. Its landmass is around 216.065 square kilometers. The states also have about 25.75 percent of the total Nigeria population.

Likewise there are seven (7) federal universities at the North West States of Nigeria and each of these federal universities has its own library attached to it namely: Kashim Ibrahim Library, Ahmadu Bello University Zaria, Kaduna State was established in 1962 followed by Abdullahi Fodiyo Library Complex, Usmanu Danfodiyo University, Sokoto and Bayero University Library, Kano were established in 1975. Subsequently in 2011 Federal University Dutsin-Ma Library, Katsina and Federal

University Dutse Library, Jigawa were established also in 2011. Then followed by Federal University Birnin Kebbi Library and Federal University Gusau, Library Zamfara State was also established in the same year 2013. These are the lists of federal universities that are located at North West States and each was situated in one of the seven listed states above.

### 3.4 Preliminary Study

A preliminary survey study was carried out by the researcher with the aim to find out the following:-

- a. Availability of OPAC in the federal University Libraries in North West States.
- b. Whether or not the OPAC is fully operational in the federal University Libraries.
- c. The total number of registered undergraduate students with the Federal University Libraries in North West State.

Questionnaire was used by the researcher to ascertain useful information in carrying out the study from the head of reader services/circulation units and head of ICT/automation of federal university libraries in North West, State of Nigeria. Below are findings of the preliminary studies.

Justification for the Selection of the Respondents Group

**a. The head of reader services/circulation librarian:** The selection of these subjects was also from the fact that they are responsible and accountable for the registration of library users. Therefore, they are in the best position to give information about the total number of registered user.

**b. The heads of ICT/automation librarian:** The selection of these subjects was also based on the fact that, they are directly involved with ICTs facilities and services in the libraries. They are in a right position to give information on availability and state condition of online public access catalogue in their library.

### Preliminary Study Findings Result

The findings of the study revealed that there was seven (7) federal University Libraries in the North West States of the country, but among them only four (4) federal University Libraries have indicated availability and operational Online Public Access Catalogue. Thus are Kashim Ibrahim Library (KIL), Ahmadu Bello University Zaria, Federal University Dutsin-Ma Library, Federal University Dutse Library Jigawa and Federal University Birnin Kebbi Library. The findings also revealed that at Bayero University Library OPAC was not active; therefore, there were no operational OPAC there. At Abdullahi Fodiyo library, Usmanu Danfodiyo University, Sokoto also same thing with Bayero University library OPAC terminal was available but not readily available for users; the Observation made at Federal University Library Gusau also was not yield any positive result because they don't have it at all.

While as at the time of the study, a total number of thirty thousand five hundred and eighty one (30,581) undergraduate students were registered with the libraries across seven federal University Libraries of North West States.

**Table: 3.4.1 Provide information from the preliminary study**

S/No	Name of the Institutions	Availability of OPAC	Fully Operational OPAC	No of Registered UG Students with Library.
1.	ABU Zaria	Yes	✓	14,576
2.	BUK Kano	Yes	x	3,820
3.	UDUS Sokoto	No	x	4,723
4.	FUDMA Dutse- Ma	Yes	✓	1,735
5.	FUD Dutse	Yes	✓	1,364
6.	FUBK Birnin Kebbi	Yes	✓	1,037
7.	FUG Gusau	No	x	1,940
<b>Total</b>	<b>7</b>		<b>4</b>	<b>30,581</b>

**Source:** Preliminary study result July, 2016.

KEY:

1. ABU – Ahmadu Bello University Zaria, Kashim Ibrahim Library, Kaduna State
2. BUK – Bayero University Library, Kano State.

3. UDUS – Usmanu Danfodiyo Sokoto, Abdullahi Fodiyo Library, Sokoto State.
4. FUDMA – Federal University Dutsi-Ma Library, Katsina State.
5. FUD – Federal University Dutse Library, Jigawa State.
6. FUBK – Federal University Birnin Kebbi Library, Kebbi State.
7. FUBK – Federal University Birnin Kebbi Library, Kebbi State.

### 3.5 Population of the Study

Population simply means the whole elements, objects or persons with common qualities under study. Nweden (1992), Afolabi (1999), Kolo(2003) & Eniayeju (2008) defined population as the totality of individuals, groups, subjects, objects and institutions that have one or more common characteristic that are of interest to the researcher. Similarly, Haruna (2013) stated that population in general term refers to the total number of the target group, items, element, events or object intended to be studied. Therefore, for the purpose of this study, the target population of the study is undergraduate students of the four federal University Libraries that are located at North West States of Nigeria, and which have availability and fully operational Online Public Access Catalogue in their libraries, as showed below on Table 3.6. The total population of this study is eighteen thousand seven hundred and twelve (18712) undergraduate students from four federal University Libraries in North West States of Nigeria, and which was the primary population of the study.

**Table: 3.5.1 Population of the Study**

S/No	Name of The Institutions	Name of Libraries	No of UG Students
1.	ABU Zaria, Kaduna	Kashim Ibrahim Library KIL	14,576
2.	FUDMA Dutse- Ma Katsina	Federal University Dutsen-Ma Library	1,735
3.	FUD Dutse, Jigawa state	Federal University Dutse Library	1,364
4.	FUBK Birnin Kebbi, Kebbi	Federal University Kebbi Library	1,037
	Total	4	18,712

### 3.6 Sampling Techniques and Sample Size

Simple random sampling technique was adopted for the study, the researcher selected four (4) federal University Libraries which met the criteria for the study by having and use OPAC at their university library. However, due to the large number of population of the study, that was eighteen thousand seven hundred and twelve (18,712) undergraduate students at four selected federal University Libraries under study. The sample size of the study was determined using Yamani formula for determining the sample size. This was used to calculate the sample size from the research population using the precision of (0.05); and arrived at three hundred and ninety two (392) samples to represent the total population for data collection. The formula is:

$$n = \frac{N}{1 + N (e)^2}$$

Where, n = sample size

N = size of population

e = level of precision

The steps used by the researcher in calculating the sample size is as follows:

$$n = \frac{18712}{1 + 18712 (0.05)^2}$$

$$n = \frac{18712}{1 + 18712 (0.0025)}$$

$$n = \frac{18712}{1 + 46.78}$$

$$n = \frac{18712}{47.78}$$

$$n = \frac{47.78}{100} \times 392$$

Thus makes researchers' sample size to be 392. In summary, the statistical evidence proved that the sample size of this study is three hundred and ninety two students

### 3.6.1 Sample Size

A sample size is a subset of a population selected to participate in the study, or it is a fraction of the whole, selected to participate in the research work. According to Ifidon (2007) if the portion of the research population selected to be study rather than studying the whole population, that portion selected is called sample size.

The sample size was 392 undergraduate students; this number was then proportionally allocated to the four federal University Libraries. This implies a percentage of each group over the total population 18,712. Therefore, the population of each University Libraries over the sum total population 18,712 and then multiplied by sample size 392. Eg.  $14576/18712 \times 392=305$ ,  $1735/18712 \times 392=36$ ,  $1364/18712 \times 392=29$ ,  $1037/18712 \times 392=22$

**Table: 3.6.2 Sample size of the study**

S/No	University Libraries Under study	Study Population	Sample Size
1.	Kashim Ibrahim Library ABU, Zaria	14576	305
2.	Federal University Dutsinma library, FUDMA Katsina	1735	36
3.	Federal University Dutse library, FUD Jigawa	1364	29
4.	Federal University Birnin Kebbi library, FUBK B/Kebbi	1037	22
	Total	18712	392

### 3.7 Data Collection Instrument

There are different type of research instruments for data collection in a research, which includes questionnaire, interview, observation and reading. Ihanacho (2004) defined questionnaire as “a research instrument designed in question form to obtain feedback information from subjects with respect to their opinions, attitudes beliefs and motives regarding a situation”. Questionnaire for undergraduate students’ attitudes toward the use OPAC were used for data collection from the respondent.

The researcher used questionnaire to elicit desired information from the respondents in easiest and quickest way. The reason why the researcher choose questionnaire was because its relatively simple method for obtaining data and questionnaire is also one of the most affordable ways to gather quantitative data, especially in a large number of population. Similarly, it is very cost effective and times consume compared to face to face interviews and very familiar with people almost everyone can complete it without any guidance needed to be completed easily and quickly. Furthermore, questionnaires give more confidential responses than interview and its less time consume to gather data from a widely scattered sample.

The researcher designed a self developed questionnaire with the help of others studies that serve as a guide to the researcher, and it was accordance with research questions. The nature of the questionnaire were structured (close form) and unstructured (open ended form) that is a combination of objective questions and given free option to respondents to express their views in their own word and other questions were designed in line with the Likert (1967) scale of measurement which require the respondents to tick (√) any options to indicate their level of agreement, and the response mode include the following: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) Undecided (UD). The questionnaire designed consist all items raised from the research questions of the study.

The questionnaire developed were contained seven (7) sections with 83 items. Section A contains 6 items for measuring demographic information of the respondents. Section B also contains 8 items eliciting response on Awareness of OPAC in the University Libraries. Section C contains 15 items

asking response on the accessibility of OPAC. Section D contains 16 items seeking response on extent of use of OPAC. Section E contains 22 items eliciting response on attitude of undergraduate students toward the use of OPAC. Section F contains 6 items seeking response on factor facilitating the use of OPAC. Section G which is the last section also contains 9 items asking response on the challenges associated with the use of OPAC.

### 3.8 Validity and Reliability of the Instruments

The research instrument i.e. (Questionnaire) was validated. Firstly, the questionnaire were scrutinized and determined by the researcher’s supervisor, and then a draft copy of was also taken to two other research experts in the field of Library and Information science, for checking, observation, correction and amendment. Finally, their comments and other necessary corrections were used on the modification of the research instrument.

For reliability of the instrument a pre-test was conducted prior to the actual data collection to make sure that the instruments fit the purpose of the study and determine by the research through conducting a pilot test at one University Library that did not form part of scope of the study. The instrument was administered to a sample of 43 respondents at Umaru Musa ‘Yar adua State University, Katsina. However a total of 40 questionnaires were returned to the researcher, the instruments was tested to determine the consistency or reliability and appropriateness of the instrument for data collection in this study using Cronbach Alpha ( $\alpha$ ) on SPSS (Version 16.0). The Cronbach Alpha ( $\alpha$ ) was calculated for all the 6 variables and the reliability of the total scale consisting of 82 Items are as follows:

**Table: 3.8.1 Reliability test result**

Variables	Cronbach’s Alpha
Awareness of OPAC	.748
Access to OPAC	.820
Use of OPAC	.892

Attitude towards the use of OPAC	.869
Factors facilitating the use of OPAC	.681
Challenges associated with the use of OPAC	.750

The Cronbach's Alpha of the variables of the study is as follows: Awareness .748, Access .820, Use .820, Attitudes .869, Factors .681 and Challenges .750 respectively. According to Enite (2014) "the coefficient varies from 0-1; Alpha coefficient below 0.6 is weak in reliability, 0.6-0.8 are strong while 0.8-1.0 are very strong reliability". Thus, the instrument to be use for this study has strong reliability on that assertion.

### **3.9 Data Collection Procedure**

The researcher administered the instrument personally with the help of a research assistant, after taken permission from the University Library Management. The researcher was entered the university library accompanied with the research assistant and distributed questionnaire to the respondents at the library premises. The respondents were given a period of 30-60 minutes to fill the questionnaire at the presence of both the researcher and research assistant, the reason for this is for clarifying any question that could be raised by the respondents while waiting for them to complete it and return.

Altogether 392 questionnaires were distributed. 305 questionnaires were distributed to students of ABU by researcher. Among 305 about 251 respondents were returned back. Likewise 36 questionnaires were distributed to the students of FUDMA and 24 of the questionnaire were returned back. In FUD 29 questionnaire were distributed to the students and 19 respondents were returned back. Similarly, 22 questionnaires were distributed to students of FUBK while 20 respondents were returned back.

### **3.10 Methods of Data Analysis**

The researcher analyzed the data gathered from the respondents using descriptive and inferential statistics analysis in chapter four. Data analysis is the process of systematically applying statistical and or logical techniques to describe and illustrate, condense and recap, and evaluate data (Shamoo &

Resnik, 2003). The researcher used descriptive statistical tools of analysis such as frequencies and percentages tables to describe the data. The data were organized, coded and analysed using Statistical Packages for Social Science (SPSS) 16.0 Versions.

The researcher also used Pearson Product Moment Coefficient Correlation (PPMCC) inferential statistics for testing the hypotheses in order to determine the existence of relationship between variables in nominal and ordinal scale form. The standard level of significance used to justify a claim of statistically significant effect is 0.05. Thus the decision of the researcher was to use as the level of significance in testing the hypothesis.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND PRESENTATION OF FINDINGS**

#### **4.0 Introduction**

This chapter deals with the presentation, analysis and interpretation of results of the data collected from the respondents on the Undergraduate Student's Attitude Toward the use of Online Public Access Catalogue in the Federal University Libraries in North West State of Nigeria. The responses are presented in line with the research questions, objectives and hypothesis of the study. The data collected was analyzed using tables, frequencies and percentages. Pearson Product Moment Correlation Coefficient PPMCC statistical tool were also used to test the hypotheses for better understanding and interpretation of the findings. The outline of this chapter is presented under the following subheadings:

#### 4.0 Introduction

#### 4.1 Responds rates

#### 4.2 Demographic Data

#### 4.3 Level of undergraduate student's awareness about OPAC in the federal University Library

#### 4.4 Extent of accessibility to OPAC by undergraduate students

#### 4.5 Extent of use of OPAC by undergraduate students

#### 4.6 Attitudes of undergraduate students towards the use of OPAC

#### 4.7 Factors facilitating the use of OPAC by undergraduate students

#### 4.8 Challenges Associated with the Use of OPAC by undergraduate students

#### 4.9 Result of the Hypothesis Testing

#### 4.10 Discussion of the Findings

#### 4.1 Response Rate

The responses from the sampled Undergraduate students are recorded and presented in the table below which presents the administered and returned rate of usable questionnaire administered to the sampled undergraduate students. A total of 392 copies of questionnaire were administered but only 314 copies were returned, see table 4.1.

**Table: 4.1 Response Rate**

S/N	University Libraries	No of Administered Questionnaires	No of Returned Questionnaires	Percentage
1.	ABU, Zaria	305	251	79.9
2.	FUDMA Katsina	36	24	7.6
3.	FUD Jigawa	29	19	6.1
4.	FUBK B/Kebbi	22	20	6.4
Total		392	314	100

Table 4.1 presents a total number of three hundred and ninety two (392) copies of questionnaire were administered in the sampled universities, out of which 314 copies representing 81.1% were filled and returned and found useable. While 78 (19.9%) were not returned. Considering the percentage of the filled and returned questionnaire, it is regarded adequate for valid analysis and interpretation. However, the demographic responses showing faculties and courses of the respondents from four selected universities were provided at appendix IV.

#### 4.2 Demographic Data

This part of the analysis presents the demographic data of the respondents that participated in the study.

It includes frequencies and percentages statistics.

##### 4.2.1 Gender Distributions Respondents

**Table: 4.2. Gender Distributions**

Gender	Frequency	Percentages
Male	230	73.2
Female	84	26.8

Total	314	100
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Table 4.2 above shows gender wise distribution of the respondents. Out of 314 respondents, 230 (73.2%) of respondents are male and 84(26.8%) of the respondents are female. This implies that the data collection for the research cut across all the gender, and analysis shows that majority 73.2 percent of the respondents were male which has dominated their female counterpart by having the highest number of participation in the responds.

#### 4.2.2 Level of Study

**Table: 4.3 Level of Study**

Level study	Frequency	Percentages
Level 1	55	17.5
Level 2	75	23.9
Level 3	117	37.3
Level 4	60	19.1
Level 5	5	1.6
Level 6	2	.6
Total	314	100

Table 4.3 above revealed the level of study of the respondents, which shows that majority 117 (37.3%) of the respondents were three hundred level students, followed by 75(23.9%) of the respondents were two hundred level. Also 60(19.1%) of the respondents were belongs to four hundred level. While 55(17.5%) of the respondents were from one hundred level. Furthermore, 5(1.6) of the respondents were five hundred level students and only 2(.6%) of them came from Six hundred level. This indicated that three hundred level undergraduate students have the highest number of the respondents.

**Table: 4.4 Shows Students Awareness about OPAC in library**

Are you aware of OPAC	Frequency	Percentages
YES	270	85.9
NO	44	14.1
Total	314	100

Table-4.4 shows that majority 270(85.9%) of the respondents were aware of the library OPAC, while 44 (14.1%) of the respondents were not aware of the OPAC in their university libraries. It can be concluded by observing the table 4.4 that majority 270 (85.9%) of respondents are aware of the existence of OPAC facilities their university libraries.

### 4.3 Level of Undergraduate Student’s Awareness about OPAC in the Federal University Library

**Table: 4.5 Level of Undergraduate Student’s Awareness about OPAC**

S/N	Level of OPAC Awareness	Highly aware		Aware		Not aware		Total
		Freq	%	Freq	%	Freq	%	
1.	OPAC provides easy access to library holdings.	178	65.9	62	22.9	30	11.1	270(100%)
2.	OPAC is a database of the library’s holdings	76	28.1	154	57.0	40	14.8	270(100%)
3.	OPAC can be searched to know the status of library materials	39	14.4	102	37.8	129	47.8	270(100%)
4.	OPAC can be used to place requests for library materials	151	55.9	60	22.2	59	21.8	270(100%)
5.	OPAC can be used to reserve library materials.	163	60.4	57	21.1	50	18.5	270(100%)
6.	OPAC can be used to check due dates for borrowed library materials.	72	26.7	76	28.1	122	45.2	270(100%)
7.	OPAC can be used to check the amount of overdue fines	82	30.4	106	39.2	82	30.4	270(100%)
8.	OPAC saves users’ search time.	143	53.0	87	32.2	40	14.8	270(100%)

Table 4.5 The study revealed that more than half 178(63.9%), 163(60.4%), 151(55.9%), 143(53.0%) and 154(57.0%) of the respondents were highly aware and aware that OPAC provides easy access to library holdings, OPAC can be used to reserve library materials, OPAC can be used to place requests for library materials and OPAC save users’ search time; OPAC is a database of the library’s holding.

The study also revealed that less than half 129(47.8%), 122(45.2%) and 82(30.4%) of the respondents were not aware that OPAC can be searched to know the status of library materials, OPAC can be used

to check due dates for borrowed library materials and OPAC can be used to check the amount of overdue fines.

**Table: 4.6 Source of awareness**

Sources	Frequency	Percentages
Through library orientation	80	29.6%
Through colleagues	150	55.6%
Through library guide/hand book	13	4.8%
Through a trained library staff	10	3.7%
Through library bulletins	3	1.1%
Through the use of library course	14	5.2%
Total	270	100.00

Table 4.6 indicated the sources through which undergraduate students become aware of the OPAC in the library, which indicates that more than half, 150 (55.6%) of the respondents become aware OPAC through their colleagues, this followed by 80(29.6%) of the respondents who learned OPAC through library orientation, and 14(5.2%) of the respondents come to know OPAC through the use of library course. This shows that majority, 150 (55.6%) of the respondents had become aware OPAC through their colleagues.

#### 4.4 Extent of accessibility to OPAC by undergraduate students

**Table: 4.7 Accessibility to OPAC**

Do you have access to OPAC in your library	Frequency	Percentages
YES	264	97.8
NO	6	2.2
Total	270	100

Table-4.7 Table 4.3 reveals that majority 264(97.8%) of the respondents have access to the library OPAC, only 6(2.2%) of the respondents had no access to the OPAC in their university libraries. From the finding of this study it is indicates that majority of respondents had access to the library OPAC.

**Table: 4.8 Extent of accessing OPAC by undergraduate students**

Extent of accessing OPAC by undergraduate students	Frequency	Percentages
Very Friendly	137	51.9
Friendly	105	39.8
Undecided	12	4.6
Fairly Friendly	9	3.4
Not Friendly	1	0.3
Total	264	100

Table 4.11 the respondents were asked to tell their opinion on extent of assessing information resources through the library OPAC. Majority 137(51.9%) of the respondents said it's Very Friendly. Less than half 105(39.8%) of the respondents suggested it was Friendly, others 12(4.6%) of the respondents indicated undecided, also 9(3.4%) of the respondents rated Fairly Friendly. It was only 1(0.3%) of the respondents who claimed that it's Not Friendly. This shows that majority of the respondents felt very friendly and friendly on accessing information resources through the use of library OPAC at their library.

**Table: 4.9 How to access OPAC**

Means	Frequency	Percentages
I access OPAC from wide area network	101	38.3
I access OPAC from my campus network	18	6.8
I access OPAC from computer terminal in library premises	140	53.0
I access OPAC from my computer lap top	5	1.9
Total	264	100.00

The data on table 4.8 above, indicates that majority 140(53.0%) of the respondents accessed library OPAC from computer terminal in library premises, and 101(38.3%) of the respondents accessed the library OPAC from wide area network, also 18(6.8%) of the respondents accessed OPAC from campus network, while 5(1.9%) of the respondents accessed OPAC from their computer lap top. The analysis shows that more than half 53.3% of the respondents accessed online public access online catalogue from the terminal at library premises and less than half accessed OPAC on the wide area network.

**Table: 4.10 Search approached used to access OPAC**

Search Approaches	Frequency	Percentages
By Author	99	37.5
By Title	138	52.3
By Subject	18	6.8
By Series	3	1.1
By ISBN	1	0.4
By Call number	5	1.9
Total	264	100.00

Table: 4.9 shows most frequent search approach used by the respondents in searching library resources, their preference for information searching. Majority 138(52.3%) of the respondents had searched OPAC by the title, 99(37.5%) of the respondents searched by author's name and another 18(6.8%) of the respondents searched by subject. It was revealed that users are not using Series, ISBN, and Call number in searching library resources. From the analysis it is observed that, preference goes to title, author and subject by 52.3%, 37.5% and 6.8% respectively.

**Table: 4.11 Type of search done on OPAC**

Types of searches	Frequency	Percentages
Keyword search	178	67.4
Boolean search	24	9.1
Phrase Search	62	23.5
Total	264	100.00

Table 4.10 shows the different type of searches used by the respondents to retrieve information materials on OPAC. From the finding 178(67.4%) of the respondents were use keyword search as their most frequent type of search conducted on the OPAC, followed by 62(23.5%) of the respondents used phrase search on OPAC, and 24(9.1%) of the respondents were use Boolean search. From the table we can analyze that “keyword search” is preferred by the user for searching documents in library.

#### 4.5 Extent of use of OPAC used by undergraduate students

**Table: 4.12 Use of OPAC**

Do you use OPAC in your library	Frequency	Percentages
YES	248	93.9
NO	16	6.1
Total	264	100

Table-4.12 it can be seen that the great majority 248(93.9%) of the respondents were use the library OPAC, while 16 (6.1%) of the respondents were found not using OPAC in their university libraries. This clearly shows that majority of the respondents were able to use OPAC in their university libraries.

**Table: 4.13 Reasons for not using the OPAC**

Reason for not using the OPAC	Frequency	Percentages
Inadequate computer terminals	7	43.8
Its time consume	3	18.7
No time for search	2	12.5
Not easy to use	1	6.3
Not needed	0	0
Is too cumbersome to use	3	18.7
Total	16	100

Table 4.13 shows results on the reasons for not using the OPAC by the respondents. few 7(43.8%) of the respondents claimed they were not using OPAC because of inadequate computer terminals, followed by 3(18.7%) and 3(18.7%) of the respondents who also claimed they were not using OPAC

because its time consume and too cumbersome to use, also very few 2(12.5%) and 1(6.3%) of the respondents claimed that because no time for search and not easy to use. From the analysis it's indicated that out of 264 of the respondents that had access to OPAC only 6.1 percent of them are not using the OPAC for some reasons identified on the table above.

**Table: 4.14 Extent of using OPAC by undergraduate students**

Extent of using OPAC	Frequency	Percentages
Daily	150	60.5
Twice a week	81	32.7
Weekly	10	4.0
Monthly	7	2.8
Total	248	100.00

Table-4.14 shows that the extent of using OPAC as per the record above. The result showed that 150(60.5%) of the respondents are using it daily, followed by 81(32.7%) of the respondents who use OPAC twice a week, while 10(4.0%) of the respondents use OPAC weekly and only 7(2.8%) of the respondents only use OPAC monthly. This analysis corroborates with findings of Veena, Mallaiiah & Pushpalatha (2015) who stated that majority of the respondents used OPAC facility daily, only few of the respondents indicated that they used OPAC Monthly.

**Table: 4.15 Purposes of using OPAC**

Purposes	Frequency	Percentages
For Assignment /class presentation	126	50.8
To Update lecture notes	20	8.1
For Personal reading	11	4.4
To know the availability of document	8	3.2
For Project /research work	80	32.3
To know the location of document	3	1.2
Total	248	100.00

Table-4.15 Respondent were ask to kindly indicated the purposes of using OPAC and majority 126(50.8%) of the respondents were using OPAC for assignment/class presentation purpose, less than half 80(32.3%) of the respondents indicated that they used OPAC for project and research work purpose, 20(8.1%) of the respondents who used OPAC to update their lecture notes, 11(4.4%) of the respondents used OPAC for personal reading, also 8(3.2%) of respondents were used OPAC to know the availability of document, while 3(1.2%) of the respondents use OPAC to know the location of document only. It was rewarding to see that the high percentages of students were using OPAC for academic purpose. From the above analysis it is clear that majority of the respondents used OPAC for Assignment /class presentation and for Project /research work.

**Table: 4.16 Level of satisfaction of use of OPAC**

Satisfaction of OPAC services	Frequency	Percentages
Very Satisfied	175	70.6
Satisfied	63	25.4
Dissatisfied	9	3.6
Very dissatisfied	1	0.4
Total	248	100

Table 4.16 Highlights that majority 175(70.6%) of the respondents indicated they were very satisfied with the use OPAC, followed by 63(25.4%) of the respondents who were satisfied with the use OPAC, and 9(3.6%) of the respondents were dissatisfied with the use OPAC, while only 1(0.4%) of the respondents were very dissatisfied. From the finding it shows that majority 70.6% of the respondents were very satisfied with the use of OPAC.

**Table: 4.17 Speed of displaying the result**

Speed for displaying the result after a search	Frequency	Percentages
Very fast	216	87.1
Fast	29	11.7
Slow	3	1.2
Total	248	100

The respondents were asked to indicate how fast OPAC system displayed the results after a search. Table 4.17 depicts that majority 216(87.1%) of the respondents indicated that OPAC is very fast for displaying the results after a search, 29(11.7%) of the respondents indicated fast in displaying the results, only 3(1.2%) of the respondents indicated OPAC is slow in displaying the results. From the finding it is evident that a large majority of 87.1% of the respondents indicates that OPAC is very fast in displaying the result.

#### 4.6 Attitude of undergraduate students towards use of OPAC

**Table: 4.18 Attitude of undergraduate students towards using OPAC**

S/N	Statement	SA/A		UD		D/SD		Total
		F	%	F	%	F	%	
								248 (100%)
A	I used the OPAC because I find it easy to use	237	95.6	1	0.4	10	4.0	248 (100%)
B	I used the OPAC because library staff encouraged me to use it	172	69.3	26	10.5	50	20.2	248 (100%)
C	I used the OPAC because I feel comfortable using it	206	83.1	32	12.9	10	4.0	248 (100%)
D	I used the OPAC because I have use it before	153	61.7	38	15.3	57	23.0	248 (100%)
E	I used the OPAC because I was shown how to use it by a member of staff	152	61.3	26	10.5	70	28.2	248 (100%)
F	I used the OPAC because I understand what the OPAC can be use for	191	77.0	39	15.7	18	7.3	248 (100%)
G	I used the OPAC because I know how to use it	189	76.2	32	12.9	27	10.9	248 (100%)
H	I used the OPAC because I know the library staff would be willing to help me	179	72.2	40	16.1	29	11.7	248 (100%)
I	Searching the OPAC is more accurate than browsing the shelves	180	72.6	33	13.3	35	14.1	248 (100%)
J	I used the OPAC because it enhance easy access to information resources in the library	215	86.7	18	7.3	15	6.0	248 (100%)
K	I prefer using OPAC to traditional manual library catalogue	202	81.5	22	8.8	24	9.7	248 (100%)
L	OPAC services increase efficiency in the use of library materials.	210	84.7	24	9.7	14	5.6	248 (100%)
M	I spend less time in the library to get the information I need because of the OPAC services.	182	73.4	42	17.0	24	9.6	248 (100%)
N	I don't really get what I need from the OPAC	35	14.1	101	40.7	112	45.2	248 (100%)
O	I use OPAC because it reduced the level of frustration I have in locating materials in the library	128	51.6	33	13.3	87	35.1	248 (100%)
P	I don't know how to get the book I needed from the OPAC	101	40.7	37	15.0	110	44.3	248 (100%)

Q	I didn't understand how it works	100	40.3	39	15.7	109	44.0	248 (100%)
R	It is stressful before you could get the exact book you need	98	39.5	30	12.1	120	48.4	248 (100%)
S	Time allotted to use OPAC at a time is very short	122	49.2	43	17.3	83	33.5	248 (100%)
T	Systems provided for the use of OPAC are not enough	153	61.7	40	16.1	55	22.2	248 (100%)
U	Problem to get a particular book while author and title is not known	146	59.0	46	18.5	56	22.5	248 (100%)
V	I think the use of OPAC is too technical for me	111	44.8	41	16.5	96	38.7	248 (100%)

Table 4.18 Shows the attitude of undergraduate students towards use of OPAC. Majority representing highest number of respondents indicating “Strongly Agree/ Agree” with the following percentages 237(95.6%), 215(86.7%), 210(84.7%), 206(83.1%), 202(81.5%), 191(77.0%), 189(76.2%), 182(73.4%), 180(72.6%), 179(72.2%), 172(69.3%) 153(61.7%) and 152(61.3%); “Undecided” 101(40.7), 46(18.5), 43(17.3), 42(17.0), 41(16.5) and 40(16.1); and “Disagree/Strongly Disagree” 120(48.4), 112(45.2), 110(44.3), 109(44.0), 96(38.7), 87(35.1), 83(33.5) and 70(28.2). From the above analysis it is clear that majority of the respondents had high positive attitude towards the use of OPAC. This finding supports the study of Mohammed and Saka (2016) found that undergraduate students’ attitudes towards the use of OPAC in university libraries showed that there is a growing interest by undergraduate students on the use of online public access catalogue in university libraries in North central Nigeria.

#### 4.7 Factors facilitating the use of OPAC by undergraduate students

**Table: 4.19 Factors facilitating the use of OPAC**

S/N	Factors	Yes		No		Total
		F	%	F	%	
1	Awareness of benefit drive from the use of OPAC	241	97.2	7	2.8	248 (100%)
2	Information searching skills	240	96.8	8	3.2	248 (100%)
3	Increase number of OPAC terminals	202	81.4	46	18.5	248 (100%)
4	Assistance of library staff at OPAC terminals	198	79.8	50	20.2	248 (100%)

5	Constant power supply	197	79.4	51	20.6	248 (100%)
6	Orientation programmes	204	82.3	44	17.7	248 (100%)

Table 4.19 indicates the factors facilitating the use OPAC by undergraduate students. The following percentages 241(97.2%), 240(96.8%), 204(82.3%), 202(81.4%), 198(79.8%) and 197(79.4%) revealed that majority of the respondents indicates several factors are facilitating the use of OPAC by undergraduate students in the federal university libraries. The findings of the study confirmed the finding of (Kaur and Sharda, 2010) (Borgman, 2011) and(Asokan and Dhanavandan, 2015) on the factors facilitating the use of OPAC which includes creating awareness, orientation programme, increase number of OPAC terminal, assistance of library staff at the OPAC terminal.

#### 4.8 Challenges associated with the use of OPAC by undergraduate students

**Table: 4.20 Challenges associated with the use of OPAC**

S/N	Challenges	Yes		No		Total
		F	%	F	%	
1	Less number of OPAC terminals in the library	216	87.1	32	12.9	248 (100%)
2	Lack of orientation from the library staff	207	83.5	41	16.5	248 (100%)
3	Lack of library guide on how to use OPAC from library staff	185	74.6	63	25.4	248 (100%)
4	Lack of needed skills/Knowledge to use OPAC	106	42.7	142	57.3	248 (100%)
5	OPAC access is password protected	129	52.0	119	48.0	248 (100%)
6	Lack of awareness about OPAC from library staff	150	60.5	98	39.5	248 (100%)
7	It is difficult to use the OPAC user's interface	118	47.6	130	52.4	248 (100%)
8	There is irregular power supply/erratic power supply	156	62.9	92	37.1	248 (100%)
9	Lack of assistance from library staff	158	63.7	90	36.3	248 (100%)

Table 4.20 indicates the challenges associated with the use of OPAC by undergraduate students. The following percentages 216(87.1%), 207(83.5%), 185(74.6%), 158 (63.7%), 156 (62.9%) and 150 (60.5%) shows that majority of the respondents indicated less number of OPAC terminals in the

library, lack of orientation, lack of library guide, lack of assistance from library staff, irregular power supply/erratic power supply, and lack of awareness about OPAC from library staff are some of the major challenges faced by undergraduate students in the federal university libraries. These findings of the analysis are in line with that of Yusuf (2012); Asubiojo & Fabunmi (2013) who stated that lack of information searching skills; awareness, erratic power supply, network failure and inadequacy of computer terminals designated for the use of OPAC were among the factors inhibiting use of OPAC.

#### 4.9 Results of the Hypotheses Testing

This section was designed to test the proposed hypotheses in this study. Pearson’s Product Moment .Correlation (PPMC) inferential statics test was carried out to determine the relationship between the variables of the study, through the use of SPSS 16.0 version. The decision criteria are that, if the P-value calculated is greater than the critical p-value (p 0.05), then the null hypothesis should be retained. On the other hand, P-value calculated is less than the critical p-value (0.05), the null hypothesis should be rejected and accept the alternative hypothesis will be retained..

##### 4.9.1 Hypothesis one Demographic Data

H0-1 There is no statistically significant relationship between demographic data and use of OPAC by undergraduate students of the federal university libraries under study.

**Table: 4.21 Relationship between gender and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria**

<b>Correlations</b>		
	GENDER	USE OF OPAC
GENDER Pearson Correlation	1	-.009
Sig. (2-tailed)		.887
N	314	281

USE OF OPAC	Pearson Correlation	-0.009	1
	Sig. (2-tailed)	.887	
	N	281	281

Table 4.21 showed that there was a positive correlation (relationship) between gender and use of OPAC by undergraduate students of the federal university libraries in North-west state of Nigeria, which was statistically significant ( $r = -.009$ ,  $n = 314$ ,  $p = .887$ , i.e. greater than 0.05). Therefore, the study rejects the null hypothesis and accepts alternative hypothesis since  $p \geq .05$ . This implies that there is statistically significant relationship between gender and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria.

**Table: 4.22 Relationship between level of study and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria.**

**Correlations**

		LEVEL OF STUDY	USE
LEVEL OF STUDY	Pearson Correlation	1	-.120*
	Sig. (2-tailed)		.044
	N	314	281
USE	Pearson Correlation	-.120*	1
	Sig. (2-tailed)	.044	
	N	281	281

Table 4.22 showed that there was a negative correlation (relationship) between level of study and use of OPAC by undergraduate students of the federal university libraries in North-west state of Nigeria, which was statistically significant ( $r = -.120$ ,  $n = 314$ ,  $p = .044$ , i.e. less than 0.05). Therefore, the study accepts null hypothesis and rejects alternative hypothesis since  $p \leq .05$ . This implies that there is no statistically significant relationship between level of study and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria.

### 4.9.2 Hypothesis two

H0-3 There is no statistically significant relationship between awareness and use of OPAC by undergraduate students of the federal university libraries under study.

**Table: 4.23 Relationship between awareness and use of OPAC by undergraduate students of the federal university libraries under study.**

		<b>Correlations</b>	
		AWARENESS	USE OF OPAC
AWARENESS	Pearson Correlation	1	.070
	Sig. (2-tailed)		.243
	N	314	281
USE OF OPAC	Pearson Correlation	.070	1
	Sig. (2-tailed)	.243	
	N	281	281

Table 4.23 above revealed that the correlation coefficient is positive relationship existing between awareness and use of OPAC by undergraduate students of the federal university libraries in North-west states of Nigeria, was statistically significant ( $r = .070$ ,  $n = 314$ ,  $p = .243$ , i.e greater than 0.05) Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis since  $p \geq .05$ . This implies that there is significant relationship between undergraduate students' awareness and their use of OPAC in the federal university libraries of North-west state of Nigeria.

### 4.9.3 Hypothesis three

H0-4 There is no statistically significant relationship between access and use of OPAC by undergraduate students of the federal university libraries under study.

**Table: 4.24 Relationship between access and use of OPAC by undergraduate students of the federal university libraries under study**

**Correlations**

		ACCESS	USE OF OPAC
ACCESS	Pearson Correlation	1	-.259**
	Sig. (2-tailed)		.000
	N	314	277
USE OF OPAC	Pearson Correlation	-.259**	1
	Sig. (2-tailed)	.000	
	N	277	281

Table 4.24 showed that there was a weak negative correlation (relationship) between access and use of OPAC by undergraduate students of the federal university libraries in North-west state of Nigeria. Which was statistically significant ( $r=-.259$   $n=314$ ,  $p=.000$ , i.e less than 0.05) Therefore, the study accepts the null hypothesis and rejects alternative hypothesis since  $p \leq .05$ . This implies that there is no statistically significant relationship between access and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria

**4.9.4 Hypothesis four**

H0-5 There is no statistically significant relationship between attitudes and the use of OPAC by undergraduate students of the federal university libraries under study.

**Table: 4.25 Relationship between attitudes and the use of OPAC by undergraduate students of the federal university libraries under study.**

**Correlations**

		ATTITUDE	USE OF OPAC
ATTITUDES	Pearson Correlation	1	.057
	Sig. (2-tailed)		.391
	N	314	232
USE OF OPAC	Pearson Correlation	.057	1
	Sig. (2-tailed)	.391	
	N	232	281

Table 4.25 showed that there was a positive correlation (relationship) between attitude and use of OPAC by undergraduate students of the federal university libraries in North-west state of Nigeria, which was statistically significant ( $r = .057$ ,  $n = 314$ ,  $p = .391$ , i.e. greater than 0.05). Therefore, the study rejects the null hypothesis and accepts alternative hypothesis since  $p \geq .05$ . This implies that there is statistically significant relationship between attitude and use of OPAC by undergraduate students of federal university libraries in North-west state of Nigeria.

#### **4.10 Discussion of the Findings**

The findings of this study were discussed in line with the research questions of this study. This study investigates Undergraduate students' attitudes toward the use of online public access catalogue in the federal university libraries in North West states of Nigeria. The discussions are based on the Seven (7) Research questions. A quantitative research methodology, using cross-sectional types of survey research design was adopted through the use of the questionnaire that was administered to the undergraduate students of the federal university libraries in North West states of Nigeria. Three hundred and ninety two (392) questionnaires were administered out of which Three hundred and fourteen (314) were returned and found useful to the study.

The results of the study showed that majority of the respondents were male. The findings revealed that demographic factors such as gender and level of study all have effect on OPAC use. The results of study showed that majority of the respondents were males that used library OPAC more than their female counter parts. As for levels of study as a demographic factor, the findings revealed that the respondents were mostly 300 level students that use OPAC more than other levels in the four selected federal university libraries in Northwest States of Nigeria. This may be because they are more familiar with OPAC having spent years in the university. This is in line with the findings made by Emiri (2015) on his study Influence of Demographic Factors N Use of OPAC by Undergraduates in selected University Libraries in Southern Nigeria 300-400 level students use OPAC more frequently than other

levels. Therefore, the use of OPAC should cut across all levels of study due to its importance on retrieval of information resources in the library. No level should be left out.

The Finding of the study on undergraduate students' awareness about OPAC, shows that, majority of the respondent 85.9% percent was fully aware of the online public access catalogue in their university libraries.. The findings of this study supported the study of Olufunmilayo & Adetimirin (2015) who found out that undergraduate's level of OPAC awareness was high in their study on OPAC awareness as a factor affecting OPAC use by Undergraduates in two Nigerian libraries. Also table 4.6 indicated the sources through which students become aware of OPAC in the library, majority of the respondents become aware OPAC through their colleagues, This finding opposes the study conducted in past by Fabunmi & Asubiojo (2013) on Awareness and use of online public access catalogue by students of Obafemi Awolowo University, Ile-Ife, Nigeria which found out that majority of the respondents were aware of the OPAC services through library orientation and the use of library course.

Consequently, the finding of the study on access to the library OPAC by undergraduate students of the federal university libraries in North West states revealed that most of the undergraduate students have access to the library OPAC, and they accessed library OPAC from computer terminal in library premises. This finding is supported by the study of Yusuf & Iwu (2010) who noted that 61.9% of students use OPAC to access library materials. But they attribute this positive development to the result of compulsory orientation programmes organized by the library for the first year students of Covenant University, Ota, Nigeria. Also the undergraduate students preferred mostly to use OPAC search by title as their main access point used in search OPAC. This finding agrees with Swaminathan (2017) who noted that most of the students used OPAC search by title followed by search by author to search information on the OPAC. Undergraduate students use OPAC to access information resources. This is because it enables them to have quick access to information to the manual card catalogue.

Furthermore, on the extent of use of OPAC by undergraduate students, findings showed that majority of undergraduate students were used the library OPAC, This finding opposes the study conducted by Onuaha, Umahi & Bamidele (2013) in their study use and satisfaction with OPAC which found out that majority of the respondents do not use the OPAC at all. Frequently, majority of the students were used OPAC daily, This finding is in line with that of Swaminathan (2015) finding on use and awareness of Online Public Access Catalogue by students and faculty members of Anna University Regional Campus, Coimbatore, where he noted that 85 (55.20%) of the respondents are using OPAC daily which includes students and faculty members. However, majority students were using OPAC for assignment/class presentation purpose. The finding of this research therefore, contravene with Thanuskodi (2012) finding who noted that majority of users consulted OPAC to know the availability and location of the requisite documents only. Also Majority of the students indicated that they were very satisfied with the use OPAC, this finding also supported the result of Kumar & Vohra (2011) in their study OPAC usage by the student and faculty members of Punjab university library Chandigarh Indian which revealed that majority of the respondents were satisfied with their use of OPAC.

The analysis of the study on undergraduate students' responses regarding their attitudes toward the use of OPAC is encouraging. As the findings indicated that majority of the respondents revealed they have positive attitude towards the use of OPAC. The reason may be because they find it easy to use, enhances easy access to information retrieval and they feel comfortable of using it.

In an attempt to identify the factors facilitating the use of OPAC by undergraduate students in the university library, the findings revealed that majority of the respondents indicated that awareness of benefit drive from the OPAC, information searching skills and orientation programmes others include increase number of OPAC terminals as well as provision of constant power supply should be provided for students to use online public access catalogue in the university libraries. The findings of the study

confirmed the finding of (Kaur & Sharda, 2010) (Borgman, 2011) & (Asokan and Dhanavandan, 2015) on the factors facilitating the use of OPAC which includes creating awareness, orientation programme, increase number of OPAC terminal, assistance of library staff at the OPAC terminal.

When asked about the challenges associated with the use of OPAC by undergraduate students. As indicated by the results, majority of the respondents indicated that inadequate number of OPAC terminals in the university libraries, lack of orientation, lack of library guide on how to use OPAC, others are lack of assistant from the library staff, unstable power supply, lack of awareness are among the major challenges that hindered the smooth use of online catalogue by students of federal university libraries in north west states of Nigeria.

Hypothesis was formulated to serve as a guide and provide an answer to the research questions. The results of the inferential analysis to test hypothesis, first hypothesis on demography rejected the null hypothesis on the prediction that there is no significant relationship between gender of undergraduate students and use of OPAC. The inferential statistics also accepted the null hypothesis that there is no significant relationship between undergraduate students' level of study and use of OPACs. Second hypothesis on awareness, the inferential statistics also rejected the hypothesis that there is no significant relationship between awareness and use of OPAC by undergraduate students. Third hypothesis on access, the inferential statistics accepted the null hypothesis that there is no significant relationship access and use of OPAC by undergraduate students. Fourth hypothesis on attitude, the inferential statistics also rejected the hypothesis that there is no significant relationship between attitudes and the use of OPAC by undergraduate students.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

This chapter presents the following sub-headings; summary of the study and discussion of major findings, conclusion, recommendations and Suggestion for further research area.

#### **5.2 Summary of the Study**

The research work is made up of the five chapters as summarized below:

Chapter one: is made up of Introduction, Statement of the problems, Research questions, Research objectives, Research hypothesis, Significance of the study, Scope and Limitation of the Study and the Operational definitions of terms.

Chapter two: deals with Review of related literature presented in relation to the research variables under the following sub-heading: Introduction, Concept and Significance of Online Public Access Catalogue, Application and adopting of Online Public Access Catalogue in University libraries, Awareness of Online Public Access Catalogue, Access to Online Public Access Catalogue by Users, Use of library Online Public Access Catalogue, Attitude of users towards the use Online Public Access Catalogue, Factors facilitating the Use of Online Public Access Catalogue, Challenges associated with

the use of Online Public Access Catalogue, Theoretical/Conceptual Framework using Diffusion of Innovation (DOI) theory and Summary of the Review and Uniqueness of the Study.

Chapter three: focuses on the research methodology which includes: Research Design, Research Setting, Preliminary Study, Findings of Preliminary Study, Population of the Study, Sampling Technique and Sample Size of the study, Data Collection Instrument, Validity and Reliability of the Instrument, Data Collection Procedure and Method of Data Analysis.

Chapter four: presented data analysis and interpretation of findings obtained from the respondents through questionnaire using SPSS 16.0 version.

Chapter five: which deal with Summary of the study, summary of the major Findings, Conclusion, Recommendation and Suggestion of further researches.

### **5.3 Summary of the Major Findings**

The major findings of this study were summarized base on the results obtained from the analysis in chapter four of the study, and in line with the research questions of the study order of arrangement as follows:

1. The study found out that the majority of students were highly aware of online public access catalogue in their university libraries and most of students had become aware of OPAC through their colleague, orientation and the use of library course.
2. The study found out that the most of the students have access to the library OPAC and majority of them access it from computer terminal in the library premises and on the campus network, the study also revealed that undergraduate students use title, author and subject as their main access point used in searching information materials on OPAC.
3. The study revealed that majority of undergraduate students were use online public access catalogue at their university library daily and many of them use it to makes their assignment/class presentation,

project research work and also update their lecture note purpose. Study also revealed that they were very satisfied with the use OPAC and indicated that it is very fast in displaying the results after a searching the library material.

4. The study found out that there was a positive attitude towards the use of online public access catalogue among undergraduate students because they found it enhances easy access to information resources in the library and also feel comfortable using it.
5. The factors facilitating the use OPAC by undergraduate students are includes: awareness of benefit drive from the use of OPAC, user's information searching skills, Orientation programmes, increase number of OPAC terminals others are assistance of library staff at OPAC terminals and provision of constant power supply.
6. The challenges associated the use of OPAC by undergraduate students in federal university libraries in North west state of Nigeria comprises the following: Less number of computer at OPAC terminals, Lack of orientation from the library staff, Lack of library guide on how to use OPAC, Lack of assistance from library staff, erratic power supply, and Lack of awareness about OPAC from library staff.
7. On inferential statistics analysis the study found that there was no significant relationship between undergraduate students' level of study *and* use, and access *and* use of OPAC in the federal university libraries in North-west state of Nigeria. Therefore, the study accepts the null hypothesis and rejects alternative hypothesis (Table 4.21 and 4.23). Also, the result of the study revealed that there was a significant relationship between undergraduate students' gender and use, awareness and use, and attitude and use of OPAC in federal university libraries in North-west state of Nigeria. Therefore, the study rejects the null hypothesis and accepts alternative (Table: 4.20, 4.22 and 4.24).

#### **5.4 Conclusion**

Online Public Access Catalogue is a very essential information retrieval tools for libraries and information centers. Today it is considered as a gateway to library resources which every library users must be aware of and use it to search their needed document and to fulfill their information requirements. The search process in OPAC has more or less remained the same, as in the card catalogue but with increased access points, varieties of search features and increased complexity of the process. The use of OPAC by undergraduate students would increase their information retrieval rate especially in locating books and other reading materials in the library.

The researcher studied the undergraduate students' attitude towards the use of Online Public Access Catalogue (OPAC) in four federal University Libraries in North-west States of Nigeria. A descriptive survey research design was used and the population of the study comprised of all the registered undergraduate students of university libraries under study. The purpose of this study was to find out the level of undergraduate students' awareness about OPAC, to what extent undergraduate students have access to OPAC in the university library, attitudes of the undergraduate students towards the use of OPAC, also factors facilitating the use of OPAC by undergraduate students as well as challenges associated with the use of OPAC by undergraduate students of federal University Libraries. The instrument for the study was questionnaire designed in both close and open ended and the rest questions are line with the 5- point Likert Scale. The sample size comprised of three hundred and ninety two (392) undergraduate students from four federal university libraries in North-west state of Nigeria, and the method of data analysis was descriptive and inferential statistics using frequencies and percentages tables through the use of SPSS 16.0 version.

The findings of the study show that undergraduate students were aware of existence of OPAC and agreed that they have access to online public access catalogue, and also they do make use of the OPAC to know if the library have the kind of information they are looking for and retrieve

information, the students also prefer to use OPAC for assignment and update their lecture notes, the students use OPAC because it provides quick access to information, undergraduates preferred mostly to use OPAC for research purposes, they also prefer to access OPAC in libraries. However, some students face challenges like lack of orientation, lack of enough computers at OPAC terminal, irregular power supply, lack of information technology knowledge to effectively utilize the OPAC, inadequate time due to pressure from library staff.

## **5.5 Recommendations**

Based on the findings, the following recommendations were made:

1. University libraries should organize user education programmes such as awareness and orientation on each session for fresh students on how to use OPAC, and be told the relevance of these OPAC to their academic achievement, in order to become aware about library OPAC.
2. Students should be training or taught on how to access information on OPAC, searching skills to all students at various levels would make maximum use of the OPAC as lack of skills/knowledge on how to use it, is among the challenges associated with the use of the OPAC.
3. Users guide on the use of online public access catalogue should be made available to undergraduate students during registration through handbook, flies and manuals.
4. University libraries should endeavour to have OPACs interface designed in simple ways that would ensure less complexities, in order to encourage use of OPAC by students.
5. University library management should provide more computer terminals for accessing OPAC within the library premises as it was identified as a challenge in the use of OPAC.

6. There is also need for university libraries to consider alternative sources of power supply such as inverter or standby generator considering the erratic nature of power supply in the country as this would also help ensuring that the OPAC can be utilized by the students at all times.
7. University library shall assign a staff who would be always there at the OPAC terminal to provide assistance to the users where necessary, this could really help the students in searching information on online public access catalogue.

### **5.6 Suggested Areas for further research**

Every research work offers some unexplored areas for further research. The study may be conducted by expanding the geographical area covered and by including more number of samples etc. The present study puts forward the areas, which have vast scope for further research, hence each research work affords a wide scope, but its scope should be confined within certain limits, for the sake of the completion of the work in a particular time frame. The following areas are suggested for further research:

1. A study shall be conducted on the use of online public access catalogue in all other tertiary institutions libraries in Nigeria.
2. Comparative study between Northwest and Northeast federal university libraries on the use of online public access catalogue by undergraduate students.
3. Awareness and use of online public access catalogue in the public libraries in Northwest part of Nigeria.

4. Postgraduate students' attitude toward the use of online public access catalogue in federal university libraries in Northwest zone of Nigeria.
5. Access and use of online public access catalogue among academic staffs in federal university libraries.

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## **APPENDIX I**

### **Questionnaire for the head Reader service/circulation Librarian**

Department of Library and Information Science,  
Faculty of Education,  
Bayero University Kano,  
P.M.B. 3011

Dear Sir/Madam,

I am a Post-graduate student of the above named Department currently undertaking a research on **“Undergraduate Students’ attitude towards the use of Online Public Access Catalogue (OPAC) in the Federal University Libraries in North West States of Nigeria”**. I wish to request your assistance and cooperation in answering the attached questionnaire. All responses will be treated strictly confidential and purely for academic purpose only.

Thank for your anticipated cooperation.

Yours faithfully,

Abdullahi Usman Gusau  
SPS/14/MLS/00014  
07032883252

## **APPENDIX II**

### **Questionnaire for the head ICT / Automation librarian**

Department of Library and Information Science,  
Faculty of Education,  
Bayero University Kano,  
P.M.B. 3011

Dear Sir/Madam,

I am a Post-graduate student of the above named Department currently undertaking a research on **“Undergraduate Students’ attitude towards the use of Online Public Access Catalogue (OPAC) in the Federal University Libraries in North West States of Nigeria”**. I wish to request your assistance and cooperation in answering the attached questionnaire. All responses will be treated strictly confidential and purely for academic purpose only.

Thank for your anticipated cooperation.

Yours faithfully,

Abdullahi Usman Gusau  
SPS/14/MLS/00014  
07032883252

**APPENDIX III**

**PRELIMINARY SURVEY QUESTIONNAIRE FOR FEDERAL UNIVERSITY LIBRARIES IN  
NORTH WEST STATES OF NIGERIA.**

**Undergraduate Students' attitude towards the use of Online Public Access Catalogue (OPAC) in  
the Federal University Libraries in North West States of Nigeria**

The following questions are designed to ascertain useful information that will assist me in the conduct of this research. All information provided will strictly use for academic purpose only of which this research is intended. Kindly assist in providing the appropriate answers as required.

**Questionnaire for the head reader services/circulation librarian**

1. Name of university.....
2. Name of your library.....

3. What is the total number of registered undergraduate students in your university library.....

**Questionnaire for the head ICT/automation librarian**

1. Does your library have online public access catalogue (OPAC)?

- a. Yes [ ]  
b. No [ ]

2. If yes, is your OPAC fully operational?

- a. Yes [ ]  
b. No [ ]

**APENDIX IV**

THE RESULT OF THE PRELIMINARY SURVEY CONDUCTED IN THE FOLLOWING INSTITUTIONS:

1. Ahmadu Bello University Zaria, Kaduna State.
2. Bayero University Kano, Kano State.
3. Usmanu Danfodiyo University Sokoto, Sokoto State.
4. Federal University Dutse-Ma, Katsina State.
5. Federal University Dutse, Jigawa State.
6. Federal University Birnin Kebbi, Kebbi State.
7. Federal University Gusau, Zamfara State.

S/No	Name of the Libraries	Availability of OPAC	Fully Operational OPAC	No of Registered UG Students with Library.
1.	Kashim Ibrahim Library	Yes	✓	14,576
2.	Bayero University Kano Library	Yes	x	3,820
3.	Abdullahi Fodiyo Library	No	x	4,723
4.	Federal University Dutse-MA Library	Yes	✓	1,735
5.	Federal University Dutse Library	Yes	✓	1,364
6.	Federal University Birnin Kebbi Library	Yes	✓	1,037
7.	Federal University Gusau Library	No	x	1,940
<b>Total</b>	<b>7</b>		<b>4</b>	<b>30,581</b>

**APPENDIX V**  
**Introductory Letter**

Department of Library and Information Science,  
Faculty of Education,  
Bayero University Kano,  
P.M.B. 3011

Dear Respondent,

**QUESTIONNAIRE FOR UNDERGRADUATE STUDENTS' ATTITUDES TOWARD THE USE OPAC**

I am a student of the above named department conducting a research titled “**Undergraduate Students’ attitude towards the use of Online Public Access Catalogue (OPAC) in the Federal University Libraries in North West States of Nigeria**”. I wish to request your assistance and cooperation in answering the attached questionnaire. All responses will be treated strictly confidential and purely for academic purpose only.

Thank for your anticipated cooperation.

Yours faithfully,

Abdullahi Usman Gusau  
SPS/14/MLS/00014  
07032883252

## APPENDIX VI

### Questionnaire for Undergraduate Students

#### SECTION A: DEMOGRAPHIC DATA

1. Please fill in the spaces provided

- a. Name of Institutions: .....
- b. Name of Library: .....
- c. Course: .....
- d. Faculty: .....

2. Gender of the respondents. Please tick (✓) your gender in the box.

- a. Male [ ]
- b. Female [ ]

3. Level of Study: Please tick

- a. Level 1 [ ]
- b. Level 2 [ ]
- c. Level 3 [ ]
- d. Level 4 [ ]
- e. Level 5 [ ]

**SECTION B: Level of undergraduate students' Awareness about OPAC**

4. Are you aware of the existence of OPAC facility in your library?

- a. Yes [ ]
- b. No [ ]

5. Indicate your level of OPAC awareness below. (Please tick appropriately)

S/N	Statement	Highly aware	aware	Not aware
1.	OPAC provides ease of access to library holdings.			
2.	OPAC is a database of the library's holdings			
3.	OPAC can be searched to know the status of library materials			
4.	OPAC can be used to place requests for library materials			
5.	OPAC can be used to reserve library materials.			
6.	OPAC can be used to check due dates for borrowed library materials.			
7.	OPAC can be used to check the amount of overdue fines			
8.	OPAC saves users' search time.			

6. How do you become about OPAC in your university library?

- a. Through library orientation [ ]
- b. Through colleagues [ ]
- c. Through library guide/hand book [ ]
- d. Through a trained library staff [ ]
- e. Through library bulletins [ ]
- f. Through the use of library course
- g. Any other (Pls. specify).....

**SECTION C: Accessibility to OPAC by undergraduate students**

7. Do you have access to OPAC in your library?

- c. Yes [ ]
- d. No [ ]

8. What is your overall assessment on the extent of accessing OPAC in your library?

- a. Very Friendly [ ]
- b. Friendly [ ]
- c. Undecided [ ]
- d. Fairly Friendly [ ]

e. Not Friendly [ ]

9. If yes how do you access the OPAC?

- a. I access OPAC from my computer lap top [ ]
- b. I access OPAC from my campus network [ ]
- c. I access OPAC from computer terminal in library premises [ ]
- d. I access OPAC from wide area network [ ]

10. Which search approach do you use to access information on OPAC?

- a. By Author [ ]
- b. By Title [ ]
- c. By Subject [ ]
- d. By Series [ ]
- e. By ISBN [ ]
- f. By Call number [ ]

11. What types of searches have you done on OPAC? (You may tick more than one)

S/N	Types of searches	Tick
1.	Keyword searching	
2.	Boolean searching	
3.	Phrase searching	

**SECTION D: Extent to which undergraduate students make use of OPAC**

12. Do you use OPAC in your library? If your answer is “no” go to item 17

- a. Yes [ ]
- b. No [ ]

13. If your answer is yes, how often do you use library OPAC?

- a. Daily [ ]
- b. Twice a week [ ]
- c. Weekly [ ]
- d. Monthly [ ]

14. For what purposes do you use OPAC? (You may tick more than one)

- a. For Assignment /class presentation [ ]

- b. To Update lecture notes [ ]
- c. For Personal reading [ ]
- d. To know the availability of document [ ]
- e. For Project /research work [ ]
- f. To know the location of document [ ]

15. What is the level of your satisfaction with OPAC use?

- f. Very Satisfied [ ]
- g. Satisfied [ ]
- h. dissatisfied [ ]
- i. Very dissatisfied [ ]

16. How do you rate the speed of displaying the results using the OPAC?

- a. Very fast [ ]
- b. Fast [ ]
- c. Slow [ ]
- d. Very slow [ ]

17. What are your reasons for not using the OPAC?

- a. Inadequate computer terminals [ ]
- b. Its time consume [ ]
- c. No time for search [ ]
- d. Not easy to use [ ]
- e. Not needed [ ]
- f. Is too cumbersome to use [ ]

**SECTION E: Undergraduate student’s attitude towards use of OPAC**

18. Please use 5 point Likert scale below to rate your level of agreement on attitude toward the use of OPAC.

Key: Strongly Agree (SA) = 5    Agree (A) = 4    Undecided (UD) = 3    Disagree (D) = 2    Strongly Disagree (SD) = 1

S/N	Statement	SA	A	UD	D	SD
1.	I used the OPAC because I find it easy to use					
2.	I used the OPAC because library staff encouraged me to use it					
3.	I used the OPAC because I feel comfortable using it					
4.	I used the OPAC because I have use it before					
5.	I used the OPAC because I was shown how to use it by a member of staff					
6.	I used the OPAC because I understand what the OPAC can be use for					
7.	I used the OPAC because I know how to use it					
8.	I used the OPAC because I know the library staff would be willing to					

	help me					
9.	Searching the OPAC is more accurate than browsing the shelves					
10.	I used the OPAC because it enhances easy access to information retrieval					
11.	I prefer using OPAC to traditional manual library catalogue					
12.	OPAC services increase efficiency in the use of library materials.					
13.	I spend less time in the library to get the information I need because of the OPAC services.					
14.	I don't really get what I need from the OPAC					
15.	I use OPAC because it reduced the level of frustration I have in locating materials in the library					
16.	I don't know how to get the book I needed from the OPAC					
17.	I didn't understand how it works					
18.	It is stressful before you could get the exact book you need					
19.	Time allotted to use OPAC at a time is very short					
20.	Systems provided for the use of OPAC are not enough					
21.	Problem to get a particular book while author and title is not known					
22.	I think the use of OPAC is too technical for me					

**SECTION F: Factors facilitating the use of OPAC by undergraduate students**

19. In your opinion what do you think are the factors that facilitated the use of OPAC at your library?

S/N	Factors	Tick as applicable
1.	Awareness of benefit drive from the use of OPAC	
2.	Information searching skills	
3.	Increase number of OPAC terminals	
4.	Assistance of library staff at OPAC terminals	
5.	Constant power supply	
6.	Orientation programmes	
7.	Others specify.....	

**SECTION G: Challenges associated with the use of OPAC by undergraduate students**

20. Which among the following challenges do you think is hindering the use of OPAC in your library?

S/N	Challenges	Tick as applicable
1.	Less number of OPAC terminals in the library	
2.	Lack of orientation from the library staff	
3.	Lack of library guide on how to use OPAC from library staff	
4.	Lack of needed skills/Knowledge to use OPAC	
5.	OPAC access is password protected	
6.	Lack of awareness about OPAC from library staff	
7.	It is difficult to use the OPAC user's interface.	
8.	There is unstable power supply/erratic power supply	
9.	Lack of assistance from library staff	

10	Others specify.....	
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## APPENDIX VII

### Cronbach's Alpha Reliability Test Result

Variables	Items	Cronbach's Alpha Coefficient
Awareness of OPAC	8	.748
Access to OPAC	15	.820
Use of OPAC	16	.892
Attitude towards the use of OPAC	22	.869
Factors facilitating the use of OPAC	6	.681
Challenges associated with the use of OPAC	9	.750

### General reliability statistical test of the variables

Reliability statistics for awareness of OPAC by undergraduate students

Cronbach's Alpha	N of Items
.748	8

Reliability statistics for access to OPAC by undergraduate students

Cronbach's Alpha	N of Items
.820	15

Reliability statistics for use of OPAC by undergraduate students

Cronbach's Alpha	N of Items
.892	16

Reliability statistics for attitude of undergraduate students toward OPAC

Cronbach's Alpha	N of Items
.869	22

Reliability statistics for factors facilitating the use of OPAC by undergraduate students

Cronbach's Alpha	N of Items
.681	6

Reliability statistics for challenges associated with the use of OPAC by undergraduate students

Cronbach's Alpha	N of Items
.750	9

## APPENDIX VIII

**Showing Faculties and Departments of the Respondents from Kashim Ibrahim Library, ABU Zaria.**

S/N	Faculties	Departments	No. of respondents
1.	<b>Agriculture</b>		
		1. Agric	1
		2. Fisheries & Agricultural Technology	1
2.	<b>Art</b>		
		1. Arabic	3
		2. Literature	2
		3. English Language	5
3.	<b>Education</b>		
		1. Agric Education	1
		2. Biology Education	2
		3. Business Education	3
		4. Chemistry Education	8
		5. Computer Science Education	2
		6. Guidance & Counseling	20
		7. Integrated Science Education	2
		8. Islamic Studies Education	5
		9. Library Science	80
		10. Vocational & Technical Education.	2
		11. Social Studies Education	3
4.	<b>Engineering</b>		
		1. Agricultural Engineering	9
		2. Chemical Engineering	3
		3. Civil Engineering	2
		4. Computer Engineering	3
		5. Electrical Engineering	4
		6. Metallurgical & Materials Engineering	1
		7. Polymer & Textile Engineering	3
5.	<b>Environmental Design</b>		
		1. Geometrics	3
		2. Industrial Design	1
6.	<b>Life Science</b>		
		1. Biochemistry	3
		2. Biological Science	3
		3. Botany	2
		4. Microbiology	17
		5. Zoology	4
7.	<b>Science</b>		
		1. Biochemistry & Molecular Biology	2
		2. Chemistry	2
		3. Computer Science	5
		4. Integrated Science	2
		5. Mathematics	6
		6. Microbiology	2
		7. Physics	1
		8. Statistics	2
8.	<b>Social Science</b>		
		1. Economics	3
		2. Geography	8
		3. Mass Communication	3
		4. Political Science	6
		5. Sociology	3
9.	<b>Medicine</b>		
		1. Anatomy	2
		2. Human Physiology	2
		3. Nursing	1
10.	<b>Physical science</b>		
		1. Geography	1
		2. Geology	2
<b>Total</b>			<b>251</b>

**Showing Faculties and Departments of the Respondents from Federal University Library, Dutsi-Ma**

S/N	Faculties	Departments	No. of respondents
1.	Agriculture		
		1. fisheries & Agric Technology	1
2.	Social Science		
		1. Sociology	5
		2. Political Science	2
		3. Geography	1
		4. Economics	1
3.	Science		
		1. Microbiology	4
		2. Biochemistry and Molecular Biology	3
		3. Biology	1
		4. Mathematics	2
		5. Food Engineering	1
		6. Computer Science & IT	3
<b>Total</b>			<b>24</b>

**Showing Faculties and Departments of the Respondents from Federal University Library, Dutse**

S/N	Faculties	Departments	No. of respondents
1.	Arts & Social Science		
		1. Economics	2
		2. English	1
2.	Agriculture		
		1. Forestry and Wildlife Management	2
3.	Science		
		1. Chemistry	4
		2. Environmental Mgt & Toxicology	1
		3. Biotechnology	1
		4. Microbiology	2
		5. Computer Science	1
4.	College of Medicine		
		1. MBBS	5
<b>Total</b>			<b>19</b>

**Showing Faculties and Departments of the Respondents from Federal University Library, Birnin Kebbi**

S/N	Faculties	Departments	No. of respondents
1.	Arts and Social Mnt Science		
		1. Accounting	2
		2. Business Administration	1
		3. English Language	1
		4. Geography	1
		5. History	1
		6. Political Science	1
		7. Sociology	1
2.	College of Health Science		
		1. Nursing	1
3.	Environment		
		1. Building	1
		2. Architecture	1
4.	Science		
		1. Applied Geo-physics	1
		2. Biochemistry	1
		3. Computer Science	2
		4. Geography	2
		5. Microbiology	1
		6. Physics	1
		7. Pure chemistry	1
<b>Total</b>			<b>20</b>

## APPENDIX IX

### Pearson's Product Moment Coefficient Correlation (PPMCC) Inferential Statics Test Result

#### Correlations

		GENDER	USE
GENDER	Pearson Correlation	1	-.009
	Sig. (2-tailed)		.887
	N	314	281
USE	Pearson Correlation	-.009	1
	Sig. (2-tailed)	.887	
	N	281	281

#### Correlations

		LEVEL OF STUDY	USE
LEVEL OF STUDY	Pearson Correlation	1	-.120*
	Sig. (2-tailed)		.044
	N	314	281
USE	Pearson Correlation	-.120*	1
	Sig. (2-tailed)	.044	
	N	281	281

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

**Correlations**

		AWARENESS	USE
AWARENESS	Pearson Correlation	1	.070
	Sig. (2-tailed)		.243
	N	314	281
USE	Pearson Correlation	.070	1
	Sig. (2-tailed)	.243	
	N	281	281

**Correlations**

		ACCESS	USE
ACCESSI	Pearson Correlation	1	-.259**
	Sig. (2-tailed)		.000
	N	314	277
USE	Pearson Correlation	-.259**	1
	Sig. (2-tailed)	.000	
	N	277	281

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

**Correlations**

		ATTITUDE	USE
ATTITUDE	Pearson Correlation	1	.057
	Sig. (2-tailed)		.391
	N	314	232
USE	Pearson Correlation	.057	1
	Sig. (2-tailed)	.391	
	N	232	281