ACCESS AND USE OF ONLINE INFORMATION SERVICES BY ACADEMIC STAFF IN AHMADU BELLO UNIVERSITY ZARIA

BY

NUHU, ELIMI MAKAMA
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DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE,
FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA

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DECLARATION

I hereby declare that this thesis has been written by me and that it is a record of my own research work: It has not been presented in any previous application for a higher degree. All Quotations are indicated and the sources of information are specifically acknowledged by means of reference

Nuhu, Elimi Makama **Date**

CERTIFICATION

This thesis titled Access and use of online Information Services Among Academics in Ahmadu Bello University Zaria, by Nuhu, Elimi Makama, meets the regulation governing the award of the degree of master of Library and information Science of Ahmadu Bello University Zaria, and is approved for its contribution to knowledge and literary presentation.

________________________ ______________________

Prof. I. I. Ekoja **Date**
Chairman, Supervisory Committee

________________________ ______________________

Dr. K. A Momoh **Date**
Member, Supervisory Committee

________________________ ______________________

Dr. Abdullahi Musa Ibrahim **Date**
Head of Department

________________________ ______________________

Prof A. A. Joshua **Date**
Dean, Post Graduate School

DEDICATION

This thesis is dedicated to my wife and children Mrs. Christiana Elimi, Lartey Elimi, Lowly Elimi, Liardon Elimi, and Liberty Elimi. May the Almighty God who enabled you to stand by me reward you more abundantly, amen.

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ABSTRACT

The study investigated access and use of online information services among academics in Ahmadu Bello University Zaria, using six research questions and three hypotheses that were formulated and answered. A survey research design was employed for the study. Out of the 2,433 academics in Ahmadu Bello University Zaria, a sample size of 355 was drawn which represented 13.77% using Krejcie and Morgan table (1973). Instrument used for data collection was a questionnaire called Academics Online Information Access and Use (AOIAU, 2013) developed by the researcher. The study tried to find out the availability of facilities (infrastructures) for online information services. The extent or level of access and use of online information services, how academics accessed online information services, types of online databases, web portals accessed and used by academics, what academics use online information services for and the challenges of accessing and using online information services in the university. The hypothesis sought to know the significant difference that exists on access and use of online information services among academics in Ahmadu Bello University Zaria. The study discovered that there are available facilities for online information services which reflected high on fibre optics and computer sets. However, there is low availability of telephone lines connection and CPT Cable connections. Academics accessed selective dissemination using email high and accessed every time and almost every time respectively. Also academics in the university have low access to online feeds (RSS feeds) and of those who access it every time and almost every time respectively. Academics mostly access online information services through the university's portal, with only few using the library's portal. On the use of online information services the study revealed that academics used selective dissemination using email and for those who use it every time and almost every time respectively. The least used online information services are on virtual library (MTN) and for those who use it every time and almost every time respectively. The formulated hypothesis revealed that there is significant difference between access and use of online in formation services among academics in Ahmadu Bello University Zaria. Generally, the study discovered that there are important online information services that academics do not access nor use. This study creates awareness on most of the online information services made available for access and use among academics.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The provision of online services has brought a complete innovation in providing information services, resulting to the development of new services. The online environment particularly the World Wide Web (www) has an unstructured environment and the development in technology has made it possible for any one with the necessary technology and skill to access anything online without independent review and evaluation resulting to unreliable information. Traditionally, information professionals select materials for their collections using some criteria that help establish the authority, accuracy and reliability of the resource. As pointed by Gbaje (2007) that "In an online environment, it is often difficult to establish reliability and authority of information. This invariably increases the chance patrons may access incorrect information. The online provides a platform on which academics and any other user could use to search catalogue, online databases, and websites. The users of online are overwhelmed by the information overload and need help to find reliable and accurate information on time. William and Sawyer (2010) supported that "online services have enabled people to have access to information they could not readily get before." The implication here is that for academics to provide quality teaching, education that leads to economic, political and social transformation the need for them to access and use online information services is central. In the 21st century, access and use of digital resources among academics enable more information available to them which will better serve them. Ibrahim (2008) stressed that “information is one of the most important resources in modern academic institutions”. Every organization requires information at all levels of activities to successfully operate”. There is no doubt that today’s organizations, especially academic institutions run on information realizing the role information plays in government establishments. Several outfits such as online information services are established for proper and efficient information access and utilization, remain the most effective and beneficial to academics due to its potentials to provide variety of information resources for their use. The explosive growth of online services made it more difficult, for patrons to make sense of it. There is a shift from not being able to get enough information to being able to identify and retrieve reliable and accurate information from the volumes of information available in digital form.

Access and Use of Online Information Resources

Access is a general term used to describe the degree to which a device, services, product, environment is accessible by as many people as possible. It can be viewed as the ability to access and the possible benefits of some system or entity. Access is not the same as “use”, which describes the extent to which a product, devices, services and environment can be used by specific users to achieve specific goals with effectiveness and satisfaction in a specified context of use (Magani, 2012). Access is strongly related to universal design when the approach involves “direct access”. This is about making things accessible to all people whether they have disability or not. An alternative is to provide “direct access” by having the entity support the use of a person’s assistive technology to achieve access.

Online information services are the lifewire of any progressive individual(s) that is concerned about accessing valuable and current information in the digital age. Access to vital information enhances qualitative education, research, teaching and academic excellence in any society. Online information services provide a platform for accessing information resources with the enabling technologies especially with the problem of information glut. Online information services are used for different services by individuals, organizations, group of persons or institutions. Ossai-Ugbah and Ogunrombi (2011) observed that “the widest used mode of communication is online, because it is fast and convenient”. Use of online services has made it possible for people all over the world to communicate and share ideas together. Bates (2003) pointed that “when looking for information knowledge workers go online”. This stressed the importance of the use of online services to enhance creativity, innovation, and development.

Productive services such as e-learning, e-commerce, e-banking are products of online services. Yelwa (2009) saw the use of online information services as a “meaningful way of providing global solution to challenges of the digital age. Therefore, providing enabling facilities and required infrastructure for online information access and use among academics is core, because it is significant to academics in term of research, teaching, learning, and other scholarly attainments. Babangida (2010) posits that “information is concerned with teaching, learning and research. Access and use of online information services provide academics with huge opportunities to:

a. Generate new ideas and intellectual best practices relevant to the need of its immediate community, the nation and the world at large.

b. Accessing current and updated information and literature for intellectual work.

c. Advancing the frontier of learning and breaking new grounds through quality teaching, research, and dissemination of knowledge of the highest quality.

d. Facilitate the attainment of vision of the university for national educational transformation and development.

The online services offer great opportunities to government, business and education. It can be used for internal communication, distribution of information, services to customers, research information, games and listening to music. Khan (2009) maintained that "Educational institutions use it for research, to deliver online courses, course materials to students, etc." Online chat allow people to carry on discussion using written text. Academics use it to perform research, publish papers, and articles. Gbaje (2007) supported that online services facilitate easy search, easy access and location of information in the global network which enhances academic excellence and qualitative research.

The Concept of Online Information Services

Online information services simply refer to the use of internet to handle information services. Such online information services include services such as: the online databases, online reference services, digital repository, library web portals, selective dissemination, the use of Online Public Access Catalogue (OPAC), online feed (RSS feed), online tutoring and such like. Basically, the use of virtual library services especially in our academic libraries is a clear example of online information services. The university library subscribed a lot of resources to be accessed and use, by its clients. All the clients need do to become users is to register with the library portal. The use of

Blogs also enveloped a type of online information services through the library portal. But the problem here is a lot of academics are not aware of such services. And if they are not aware, how can they access and use them for their scholarly attainment?

Online Information Access

"Access" in online information services is of two fold "access at cost and access at no cost" (Ochogwu, 2012). Access to online resources can be difficult as a result of certain activities. IFLA (International Federation of Library Association and Institution), which is the seat of information stakeholders in the world is committed to ensuring the widest possible access to information for all people in accordance with the principles expressed in the Glasgow Declaration on Libraries Information Services and Intellectual Freedom (Eze, 2012). Access to knowledge and information can be enhanced only through online information services. Therefore, the concept of "access" free access to literature (digital), online services, free of charge and free of most copyright and licensing restrictions. The resources include: research results, raw data, metadata, source materials, digital representation of pictorial and graphical materials and scholarly materials. "Access" therefore is having way into information, facilities or materials that are free or not free (it involves cost or free of cost).

Use of Online Information

Online connectivity and accessibility is core to the use of online information. It stresses what online information services are for. Activities carried out through online information services emphasize its use. It infers the functions of online information services to academics. It also entails what academics use online services for. There are different types of services provided online. They are mainly to be used by individuals, organizations, and institutions. The services of the academia require the high use of online information services (Ukpebor, 2012). Users can use online information services for educational and research purposes, some users can use it for entertainment while others use information resources for preparing lecture notes and other scholarly attainment.

The Overview of Ahmadu Bello University, Zaria

Ahmadu Bello University was founded on 4th of October 1962, as the University of Northern Nigeria. It became a federal university in 1975. Complex and extensive, it is one of the first generation universities in Nigeria. The Main Campus is located on 7000 hectares of land in Samaru, with a similar Kongo Campus at Tudun Wada both in Zaria, Kaduna State. The University has 12 faculties: Administration, Agriculture, Arts, Education, Environmental Design, Engineering, Law, Pharmaceutical Sciences, Sciences, Social Sciences, Medicine and Veterinary Medicine.

There are 98 academic departments, a Postgraduate School, a Centre for Energy Research and Training; an Institute of Agricultural Research and Training; an Institute of Education, an Institute of Development Research; a National Animal Production Research Institute; a National Agricultural Extension Research Liaison Services and a Division of Agricultural Colleges. The university has an Iya Abubakar Computer Center; Center for Bio-Tech, Dantata Cisco Network Academic and some Internet cafes that are commercial and faculties based. The Key Officers of the University are the Visitor, Chancellor, Pro-chancellor and Chairman of Council, Vice Chancellor, Deputy Vice Chancellors (Administration and Academic), Registrar, Bursar, Librarian, Deans, Deans and Heads of Departments and Units. The composition of the students population is highly cosmopolitan, with students from almost every local government and state of Nigeria, other African countries, Middle East, Asia and Europe. There are over 50,000 students pursuing a diversity of courses of study in the University at the undergraduate and sub-degree levels; postgraduate students number over 10,000.

The University has over 2,433 academic staff, over 6,000 non-academic staff. The Ahmadu Bello University Library complex is made up of Kashim Ibrahim Library (the Samaru Main Campus Library) which seats 2000 readers, boasts of over 446,696 volumes of books/bound periodicals and over 2873 current journals titles and MTN digital library (for online information access and use), the Agricultural Library, Samaru Public Library, Medical Library, Lee T. Railack Veterinary Library. The other libraries are President Kennedy Library (Main Library on the Kongo Campus), the Law Library and Institute of Education Library, and a network of Faculty and Departmental libraries.

The University receives much of its funding from Federal Government of Nigeria, through the National Universities Commission. On its part, the University generates some internal revenue to augment shortfalls in government grants. The community remarkably has its own microfinance bank, the Ahmadu Bello University Community Micro Finance Bank. It is well positioned to cater for the financial transactions of the University community. The physical environment is experiencing full comprehensive renewal, which students clearly take pride in, as indeed they should. The University has a virile alumni association that is very widespread and very active in identifying with and promoting the good name of the university.

The necessity for a national information technology policy became more obvious after the participation of Nigerian delegation in the first African Development forum on the challenge to Africa for globalization in the information age held in Addis Ababa in October, 1999. As a result, a national workshop on the National Information and Communication Infrastructure was held in Abuja in March 2000. In an information age, information technology policy is the catalyst for information transfer. The Nigerian government approved a National Information Technology Policy in March 2001. The implementation started in April 2001 with the establishment of the National Information Technology Development Agency with the mission to use information technology for education, creation of wealth, poverty eradication, job creation and global competitiveness. As observed by Gbaje (2007), the unstable nature of Nigeria's economy, political environment, government apathy towards information services, weak and uncoordinated information professionals among others constitute barriers to effective online information access and use for scholarly attainment and research.

These factors have indeed affected online information services in Ahmadu Bello University, Zaria. Misplacement of priority makes the university to play low their focus in providing the necessary platform that is effective enough to enable users access and use online information resources. The huge services provided by online services providers are pivotal to academic communities. The impact of ICT up till now in the University is issue of concern. The rating of universities globally, in the continent of Africa and nationally has direct bearing with the provision and the use of online facilities by patrons in accessing and utilization of information resources online. Provision of online services in the university is supposed to have reached advance stage by now given its significance in enabling users to access and use needed information easily and on time. Online services have redefined the way information seekers look for information. Online information services enable users to:

- access and select resources and evaluate their quality
- provide enabling tools that enable effective location of complex web resources.
- access to different online information service providers in various fields of users demand.
- see the potentialities of library services in academic institution in assisting the users to the relevant sources and resources.
- go in line with the global best practices so as not to suffer the demerits of lack of digitization.

Banzal (2007) views online information access in academic communities inevitable if there will be progress and development. To further stress this Ojedokun and Owalabi (2003) maintain that accessing the right information at the right time affects its value, therefore the need to use online services is not negotiable.

1.2 Statement of the Problem

The Nigerian National Policy for Information Technology vision statement is: “To make Nigeria one of the leading information technology countries in Africa and a key player in the information society, using information technology as the engine for sustainable development and global competitiveness”. Deliberate efforts are made through the National Universities Commission (NUC) on the implementation of the IT policy especially in academic institutions, a lot of problems have affected its impact after 13 years. Ya'u (2003) asserted that implementation of IT policy has the opportunity to address the problems of inadequate teaching resources, and research materials in institutions of higher learning especially the universities through their academic libraries. This could be through the use of online information services to facilitate access to relevant and current information resources for teaching, learning and research development. The academia in Ahmadu Bello University are the beneficiaries of the impact of online information services to access and use relevant resources for their academic and scholarly attainment. As observed by Omekwu (2003) there is growing concern on how online information services will be reliable enough to enable users in the higher institutions of academic learning to go online at any time to access any relevant information they need. As pointed by Makama (2008) "Online information services enable limitless access to global information resources with immense opportunities to retrieve selected information resources without barriers of time space or format".

The past few years have seen the growth and embedment of online information resources and services in academic libraries. The proliferation of information technology such as internet facilities in academic libraries has resulted in the emergence of online information resources and services. Through the NUC, a lot of efforts in providing online information services have been made, such as the virtual library websites, Online Public Access Catalogue (OPAC), digital repository, selective dissemination using e-mail. Also through the library portal, Ahmadu Bello University has subscribed for a lot of online databases that are meant to be accessed and used especially among academics.

Surprisingly, this researcher has observed that there is no much studies done on access and use of online information services in Ahmadu Bello University Zaria despite the huge funds spent on subscription of those online information resources and services. This informed the researcher's interest on the study – access and use of online information services among academics in Ahmadu Bello University, Zaria.

1.3 Research Questions

The study seeks to answer the following research questions:

1. What are the available online information facilities available for online information service delivery in Ahmadu Bello University, Zaria?
2. What types of online information services are accessible to academics in Ahmadu Bello University, Zaria?
3. To what extent do academics use online information services in Ahmadu Bello University Zaria?
4. How do academics access the online information services in Ahmadu Bello University, Zaria?
5. For what purpose do academics use online information services in Ahmadu Bello University, Zaria?
6. What difficulties do academics encounter in the use of online information services in Ahmadu Bello University, Zaria?

1.4 Research Hypotheses

The study will also attempt to test the following formulated hypotheses:

$H0_1$: There is no significant difference in the use of online information services between academics in Pure Sciences and Social Sciences.

$H0_2$: There is no significant difference in access to online information between academics in applied sciences and humanities.

$H0_3$: There is no significant difference between access and use of online information services among academics in Ahmadu Bello University Zaria.

1.5 Objectives of the Study

The general objective of the study is to investigate access and use of online information services among academics in Ahmadu Bello University, Zaria. But specifically, the objectives are:

1. To determine the facilities available for online information service delivery among academics in Ahmadu Bello University, Zaria.
2. To determine the extent of uses of online information services by academics in the university.
3. To find out what types of online information services are accessible by academics in the university.
4. To discover how academics in the university access online information services.
5. To identify the purposes for which academics use online information services in the university.

6. To identify difficulties academics encounter in the use of online information services in Ahmadu Bello University, Zaria.

1.6 Significance of the Study

The study will help in providing information as to access and use of online information services among academics in Ahmadu Bello University Zaria. Academics in the university have important role in imparting knowledge to thousands of students and even staff in the university, access and use of online information service will indeed enhance their academic capacity, quality education, and provide up to date knowledge for social, economic and political transformation of the nation. With the huge investment on providing online information services by the university to its users, academics, pilot other users because of the nature of their work on teaching, learning, research and other scholarly responsibilities. Therefore, there is need for this study to examine the impact of these online information services especially to academics and to further encourage the management of the university to appreciate and improve on providing more online information services to the entire users in the university.

1.7 Scope of the Study

The study covers access and use of online information services among academics in Ahmadu Bello University, Zaria. There are 12 faculties, 3 institutes, 7 centres and 98 Departments with a total of 2433 Academics. I want to state clearly here that the study does not include Academics in other affiliated institutes to Ahmadu Bello University, Zaria. The study covers majorly academics from faculties based in Samaru and Kongo Campuses.

1.8 Limitation of the Study

The study is limited to Ahmadu Bello University Zaria, due to constrains of funds and the time within which to carry out this research, present and defend it, pose as a limitation among others.

1.9 Definition of Operational Terms

Access: Infers ability to have way to a device, services, product, environment to meet a need. Access to resources provided, facilities, information becomes important in the digital age.

Use: Describe the extent to which a product, services devices and environment can be utilized by group or specific users to achieve specific goals.

Online services: This is the use of computers connected through a network or telecommunication services that enables internet services such as world wide web, online databases, online, OPACS, and other digital services.

Academics: Are intellectuals in the universities, who teach, carry out researches, and impart knowledge to undergraduate and postgraduate students.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The purpose of this chapter is to review relevant, related literature on access and use of online information services among academics within and outside Nigeria comprising articles, books, journals, internet resources etc. For better understanding the chapter has been structured according to the following sub-headings:

2.2 Facilities: The Basis for Online Information Service Delivery

2.2.2 Pre-requisite of Facilities in Service Delivery in an Information System

2.2.3 Infrastructure for Online Information Services in Nigeria

2.3 The Importance of Online Information Services to Academics

2.4 Awareness and Online Information Service Literacy

2.4.2 Online Information Services for Academics: The Service Providers

2.5 Database: Academic Online Information Services

2.5.2 Websites: Academic Information Services

2.5.3 Web portals: Core to Information Access

2.6 Online Information Services for Academics

2.6.2 Online Information Resources in Academic Institutions

2.7 The Challenges of Access and Use of Online Information Services among Academics

2.8 Summary of the Review

2.2 Facilities: The Basis for Online Information Service Delivery

Facilities are basic infrastructural pre-requisite for online information services. The requirement of basic facilities in online information services is core. These are physical equipments that users use to carry out services in an online environment. Olatokun and Momoh (2005) stressed that the basic facilities needed for online information services are the electronic computers. The introduction of computers especially in tertiary institutions enhances improvement, productivity and access to internet among other benefits. Computer technology offers one of the greatest challenges of our time. Organizations, institutions and libraries have found its usages valuable as it ensures speed, efficiency and accurate record and information storage. Computer can be of tremendous assistance either in easing arduous task of manual processing or time saving in the retrieval of information. These processes enhance effective service delivery to patrons and allow access to vital information resources. As maintained by Adedeji, Longe and Fabunmi (2000) "The provision of infrastructural facilities is the bedrock of online information services". Technological consideration must be balanced by human factor consideration. A careful balance between technology and the complexities of human element would respond to the potentially negative attitude disposition of users to such information systems. As it is commonly said "No hardware no online information services, academics need enabling infrastructure so that they can use them to access needed online information resources to meet their needs.

2.2.2 Pre-requisite of Facilities in Service Delivery in an Online Information Services

An information system is a set of resources, men, materials and procedure to attain information goal within particular socio-economic environments which produce and utilize the system as a tool for development. An information system can be manual or computer based. It consists of a mechanized and automatic applications of computers for online services, that enables information input, handling, processing, and retrieval. Oketuji (2000) pointed out that electronic facilities enables a lot of service delivery, the transmission and receiving of messages, information, data files and letters of documents are possible by means of point-to-point system or computer-based messages systems. The provision of physical facilities such as computers facilitate quick service delivery in an information system, one of the important role of government to its academics is the provision of required facilities for online information services. Lack of it will affect effective quality information service delivery which is central to academics in tertiary institutions. Infrastructural ICT facilities are the core underlying foundations, basic installations and facilities on which online service delivery are based.

The provision of facilities such as power plants, telecommunication systems are necessary. Hardwares to be used are basic to online information services. Oyediran (2005) advocates the provision of infrastructural based tertiary institutions that will enhance human capacity for ICT. This enables academics to seek and access nationally and internationally available resources for their scholarly attainments. Online services are central to academics in the needs of highly educated professionals who possess relevant knowledge and understanding of the systems and relevant skills for ICT applications – and online services. One of the objectives of National information infrastructure include the provision of hardware infrastructure and software to enable skilled personnel have easy access to the vast array of services and information resources online.

2.2.3 Infrastructure for Online Information Services in Nigeria

The provision of National Information Infrastructure (NII) backbone as the gateway to the global information infrastructure (GII), the interconnectivity between the state Information Infrastructure (SII) and the local information infrastructure (LII) formed the synthesis of the online information services in any nation. These are the basic installations in which online information services are based. This informed why the Nigerian Government launched her satellite 0 the Very Small Aperture Terminal (VSAT 1) in 2011. The Government also launched two different satellites thereafter, that is, the Very Small Aperture Terminal (VSAT II) and the Exceptional Satellite (XSAT) to provide the necessary infrastructure for online information service delivery especially in the academic institutions. These satellites enable users especially the academics to send and receive information online. VSAT I, VSAT II and XSAT are equipment that are known as earth station. They are used for receiving and sending satellite transmission. They use wireless for last mile connectivity satellite. These communications offer rapid access and unlimited mobility anywhere in the world. The objectives are to:

1. Provide equitable access to all users and stakeholders

2. Guarantee accuracy, confidentiality, availability and quality of information

3. Provide reliable and secured gateway to global information infrastructure

4. Stimulate the creation and sharing of National and international knowledge

5. Empower the citizenry to be able to compete in the information societies. (Nigeria information policy, 2001)

To access and use relevant online information services to attain one's need with the aid of information technologies, the provision of on-line public access catalogue (OPAC) is of great importance. Aina (2002) advanced some provisions of online information services to include: On-line databases, virtual libraries and CD-Roms. Most online resources are available only through subscription. The provision of online information services has been greatly influenced by the advent of information and communication technology. This development has affected the online information users, and the services provided. This has made it important to carry out this study, to identify problems of online information access and use by academics in the university. The provision of online information services enables effective access and use of information resources by users to solve the problems of information needs. Achonna (2008) observed that "the provision of online information services would make users who have adapted to the realities of this present time, comfortable with the new innovations in Information and Communication Technology". Users find it easy to access information resources online, and also have the ability to synthesize these resources for their needs. It becomes important to academics to attain their objectives.

The provision of online information services in university communities supplement the print based sources of information services. Online resources open up possibility of searching multiple files at the same time, searches can be printed out and saved to be repeated at a later date. They are updated more often than the printed tools (Jones and Fox, 2009). To remain relevant and sustain the ever changing knowledge age, and to continue to contribute meaningfully in delivering life long learning, universities through their libraries network need to explore and use new ways of rendering services that are apt to the demand of the age. This can be done through the provision of online services. Elisha (2006) maintained that the use of online information services is justified in that it provides access to learning resources, information and knowledge. Distance is no longer a barrier as resources are made available through the use of the relevant technology.

The provision of online information services in Nigeria is in a very high demand. Online services are now a mature, reliable, efficient and technologically advanced platform for any user who wish to access and use information resources available online. BusinessCom is one of the leading online services in Nigeria. It offers services such as Broadband internet access. Nigerian customers receive the services they require to run their business smoothly on a day-to-day basis. Gidandabino (2009) outlined the services provided by Nigerian online service providers as follows: toll quality voice, data, video and media rich applications which are delivered to handhelds, laptops and mobiles across Nigerian network. The enabling infrastructure for online services are been provided to some extent in Nigeria. Jidaw.com Nigeria's premier IT and Telecom resource has created directory of the leading online service providers based in different locations in Nigeria, to assist in making wise and profitable business decisions in the area of online services. Examples of those online service providers include: Megatech networks based in Kano, URL: http://www.megatechnet.com. We also have Skannet General Data Engineering Services Plc (GDES) based in Ibadan. URL: http://www.skannet.com. In Lagos Roseccom Nigeria Limited Abuja website: http://www.rosecom.net, internet and data service, we have MWEB Nigeria URL: http://www.mwebnigeria.com, World Wide Web Limited located in Kaduna for internet and data services, website: http://www.wwlkad.com, Stallionet in Akwa Ibom for internet and data services, website: http://www.stallionet.com.

Nigeria is a nation that wants to grow. This can be seen in the transformation agenda of President Goodluck Jonathan. In order for this growth to happen, the communication infrastructure has to be in place. This will enhance online information services in meeting the demands of the modern age through online information access and use. The provision of online information services has the potential of transforming the economy within a short time. The transformation of online services is evident with the recent decision of the Joint Admission Matriculation Board to adopt the use of online. This has brought about significant progress in JAMB office. Presently, the Nigerian Aviation industry has employed the use of online services in booking of flights. In the banking industry also, almost all banks in Nigeria are operating online services. This has brought about a radical change in services more than what was obtained in the manual operations. Provision of online services in Nigerian universities will also bring about a radical change in the Educational Sector. This has informed the concern of the researcher on online information access and use by Academics in Ahmadu Bello University, Zaria.

2.3 The Importance of Online Information Services to Academics

Access and use of online information services is a significant issue in any sector of an economy. For the educational sector to experience the kind of development and transformation required, its academics must be provided with effective online information services. The universities and other tertiary institutions must be encouraged and provided with the necessary facilities to enable users access and use relevant information resources they need online. Information and communication technology has become imperative in academic institutions in providing a platform for users to access and use online information resources for their academic attainment. For academic departments and the faculties to remain relevant in the present information age, the facilities necessary for online information access and use need to be addressed properly. Groach (1995) observed that the application of online computer access for information retrieval, replacing card files and print indexes, represents one of the most significant break from the past. Therefore libraries in academic institutions need to create online services for information access and use by patrons. De and Richard (1989) in the same vein, viewed that online information access was a creation of search strategies that could exploit the unique flexibility of computerized access to information. The most prominent development in this area was the "Boolean searching" which permitted one to search a database using logical connectors such as and, or, or not. Such logical techniques permitted very sophisticated searching by narrowing down the search and obtaining more precise access to large bodies of knowledge in shorter period of time. Academics need to use these in accessing relevant information resources online.

Aina (2003) stated thus: "one of the major products of the convergence of computers and telecommunications technology is the online searching". The user is able to access information both bibliographic and full text in several million documents over a long distance. Online information search is a direct communication between the user and the computer system in a literature mode to access and use relevant information needed. Online information access is fast, accurate and comprehensive.

Huber (2012) saw the importance of online services in encouraging Nigerians to engage in that which will produce results in transforming their lives and the economy. Terry and Erika (2006) on the use of online information resources confirmed that "its access influenced people's behaviour, primarily academic staff, students, friends, university library staff, and people outside the university who know the relevance of online information resources." Academics are seen in any society as the engine room of knowledge, in past, current, in internal and external information. This is because online information services formed the fabric of academic excellence through the access and use of value added information resources.

Gbaje (2007) maintained that online information services provide "value-added solution for higher institutions and facilitate access and use of enormous current volume of academic information." Online information services have the opportunity to address the scarcity of teaching and research materials in the libraries of institutions of higher education in Nigeria, including Ahmadu Bello University, Zaria.

The online information services allow institutions and researchers to share their own research output with the global community as well as ensure the preservation of Nigerian cultural heritage.

Hirsh and Dirikelakar (2004) pointed out that "online information services would improve the quality of teaching and research institution through the provision of current e-books, journals and other materials. It enhances access to global library (Internet)". It also facilitates quality research, scholarly attainment and life-long learning through the establishment of access and use of shared online archival collections. Moreover, online information services provide guidelines on ways of applying appropriate technologies for the production of online information services to advance the use and ability to globally distributed networks of online information services.

University institutions should shoulder the task of providing its academics with online information service to enable them access and use them by building enough computer laboratories that are connected to enhance locally-available information services to its academics and the glob. Ojedokun and Owolabi (2003) outlined the relevance of online information services thus:

- Access and use of online information service enhances quality teaching and research in academic institutions
- It facilitates higher academic performances in the university.
- It provides a platform for scholarship, research and qualitative learning with the provision of enabling infrastructures.

- Is the template synthesis in which academic community can apply appropriate technologies to access and use digital information resources
- It supports the use and usuability of global distributed networked information services

2.4 Awareness and Online Information Service Literacy

Online information literacy requires awareness. Online information literacy is an integral requirement by academics. It involves computer literacy, technological literacy and ability to synthesize resources accessed to ascertain the authenticity, authority and the relevance. Aina, Mutula and Tiamiyu (2008) acknowledged that technological knowledge is needed to improve the knowledge, such knowledge which is in short supply in this country, is available in the global digital society. Awareness facilitate more effective and efficient use and management of online information services: knowledge of online services enhances organized accumulation of information at specific point in such networks, where a point could be human being, a document or a database, online service involves use of pieces of equipment, network infrastructure and the associated knowledge and skills for creating, manipulating, transferring and using information or knowledge. Arunachalam (2004) asserted that online information literacy is a global initiative to open access and open software being supported by less advantaged countries in order to promote the sharing of knowledge resources as well as reduce dependency on proprietary information and technologies. Open access refers to resources that are openly available to users with no requirements for authentication or payment, and is defined, in the context of published information, as a publication model wherein users who access the information are not charged for access to articles, or other resources, and free to read, download, copy, distribute, print, search or link to the full text of these resources, provided they do not violate copyright rules (Budapest Open Access Initiative, 2002).

Abdulaziz (2008) sees online information literacy as the capacity to recognize information needs, locate and evaluate the quality, store and retrieve the information, make effective use and apply it to create and communicate knowledge. Access and use of online information create competence among academics.

Online information literacy is important to our higher institutes of learning. Access and use of online information resources contribute immensely in our tertiary institutions of higher learning. The online literacy level of the academics in our universities affect the quality of graduates that are produced every year. Tertiary education is critical to provide the expertise for the deployment and adoption of ICT initiatives; for online in formation access and use. Dutta (2004) in dismay pointed out that problem of underdeveloped, publishing and poor publishing capabilities have hampered online literacy growth of the indigenous information system.

2.4.2 Online Information Services for Academics: The Service Providers

There is nothing exciting for information seekers than been able to access needed information they need online. There are basically three types of online information service providers that Academics need to know (Bates, 2003). They include:

a. Free websites online providers;

b. Fee based websites online service providers, and

c. Value-added websites online service providers.

Free websites include web pages maintained by companies, publishers, government agencies, trade associations and experts on a particular topic, discipline or industry. The most obvious benefit of these sites is that they are free. They are individually maintained in the web. Examples of these websites include: www.elibrary.com, www.findarticles.com.andwww. ft.com. Academics can access them freely, provided they have computer connected for online services. There is no need of payment before accessing information on these sites.

The fee-based websites include web pages that offer published articles or high value information which may be available in the free websites. They often have preformatted information collection of materials. They provide content archives dating back to a year or more. Examples are: www.edgar-online.com, www.10kwizard.com., www.hoovers.com, www.aiip.org, www.ecnext.com, www.marketresearch.com, and www.mindbranch.com. These websites are important to academics because they provide information that are important to academics. Though they are not free, payment is required before resources can be accessed and used.

The value-added websites are web pages that offer high-quality information resources from a wide variety of sources, including newspapers, newswires, from around the world, trade magazines, newsletters, investment house reports and more. They have extensive archives of periodicals and historical financial data. Examples of these websites are: www.Lexisnexis.com, www.dialogweb.com, www.global.factiva.com and www.questel.orbit.com.

These services offer powerful tools, which enable academics to search hundreds of information sources, current information and archives, at the same time the results can be downloaded, printed or e-mailed plus electronic clipping features that keep researchers informed about topics they selected. These websites are highly relevant and important to academics. They are professionally owned websites.

Literacy requires the provision of basic infrastructural facilities that are the underlying foundations, basic installations in which online information services are based, is of great significance in Ahmadu Bello University, Zaria, for its academics. Online information access and use would remain a mirage without the necessary online infrastructure put in place. Information technology built on reliable human resources and infrastructure constitute the fundamental tool and means of assessing, planning, accessing, managing development change and for achieving sustainable growth by academics. Today information technology has made the world a global village. The information required to make good decision, quality research finding, competitive intelligence, scholarly attainment, job creation, poverty eradication and academic excellence, resides not within an organization or academic community but it is beyond its boundaries. Salako (2010) in the same understanding observes that "To find external information today, knowledge seekers go online". This however requires that knowledge seekers must be knowledgeable enough to sieve or filter and synthesize the millions of information resources accessed online because not all information accessed online are reliable.

Williams and Saryer (2010) support the significant premium of online information services in the academic community in which "webCT and other course-management software for administering online assignments, schedules, examinations and grades" are used. One of the most intriguing developments in education at all levels, however is the rise of distance-learning or e-learning, the name given to online education programmes. But the impact of information technology in education has immensely benefitted people in the academic communities. In future, we will see software called "intelligent tutoring systems", that gives students individualized instruction to improve their performance academically.

Online information resources may simplify problem solving and work towards achieving an effective decision but for that it has to be exact, reliable, relevant, actual and accessible for the appropriate individual in fit time and in a suitable form.

Exploration of online information services in the process of problem solving in context and utilization in research finding could solve so many problems and create room suited to meet users' needs. Robinson (1998) pointed out that "Those who have difficulty communicating face-to-face may be able to engage in interactive communication. However, with these huge advantages of online information access and use especially in academic communities, the researcher has observed that Ahmadu Bello University community is faced with some challenges in providing its academics the platform for access and use of information services in the university.

2.5 Database: Academic Online Information Services

The role of databases in providing academics with relevant needed information cannot be overemphasized. A database is a number of linked files. The file is a collection of similar records with relationships defined between those records. A record is the information contained in a database relating to one document or item. Records are composed of a number of fields. The field may be fixed or variable length. Within fields, individual data elements of information may be designated as subfields. Sivadas (2010) maintained that databases may be categorized into either reference or source databases. Reference databases refer the user to another source such as a document, an organization or an individual for additional information or for full text of a document.

There are three types of reference databases academics can use for their online consultations.

i. **Bibliographic databases:** They include citations or bibliographic references and sometimes abstracts.

ii. **Catalogue databases:** A special type of bibliographic database as they show the stock of a given library or library network (online) that can provide important information to academics.

iii. **Referral databases**, which offer reference to information or data of directory type to be used by academics.

Databases are important online information sources to academics, because they provide access to relevant information for the academics. Information in databases is considered to have more integrity. That is the information is more accurate and up to date. The beauty of databases to academics is that you can locate record or information quickly. Sawyer (2010) pointed out that online database services put enormous resources at the users disposal, which is relevant to academics especially in our universities. For instance, the web database which contains text links to other documents, and hypermedia database which contains these links as well as graphics, sound and video are important in providing information for academics.

2.5.2 Websites: Academics Online Information Services

Websites are central in online information services; they provide access to needed information using Uniform Resources Locator (URL). A website or simply site is a location on a particular computer on the web that has unique address (URL). Jones and Fox (2009) asserted that websites provide relevant information to users. You can transact a business using a website. Website is composed of a webpage or collection of related web pages, a document on the World Wide Web that can include text, sound and video information. The homepage identifies the website and contains links to other pages at the site. Knowing the site address is central to online information access. Like the URL, it is a string of characters that point to specific piece of information anywhere on the web. This enables users, especially academics in the university to access qualitative information resources for utilization. Understanding the websites (what they are for) helps academics to look for relevant websites that will enhance access to their needed information on the site. Melanie (2009) maintained that in accessing and using websites, users need to know some protocols involved. The URL consists of web protocol, domain name or web server name, directory (folder) and the file within the directory. E.g.

Protocol	Domain name	Directory	File
http://	www.nps.gov	yose	home.htm

http:// is a protocol set of communication rules for exchanging information. It appears at the beginning of the web addresses, e.g. (http://www.nps.gov).

Hypertext Transfer Protocol (HTTP) is communication rules that allows browsers to connect with web servers.

www.nps.gov: is a domain name or (web server name) is simply a location on the internet, the particular web server. It tells the location and the type of address. Domain-name components are separated by periods (called "dots"). The last part of the domain, called top-level domain, is a three letter extension that describes the type of the domain. E.g. gov, .com, .net, .edu. .org .mil .int. (The full meaning are given below).

.gov – government, .com – commercial, .net – network, .edu – education, .mil – military, .int – international organizations. Some of the top level domain names also include a two letter code extension for the country, e.g. .US – United State, .Ca – Canada, .MX – Mexico, .UK – United Kingdom, .ng – Nigeria etc.

Yose: for example the directory name on the server from which your browser need to pull the file.

home.htm: is a particular page or document that you are seeking. Is an extension to the file name and this extension informs the browser that the file is an HTML file.

The knowledge about the websites and all its complexity helps users on what to do when looking for information online through the websites. Academics need clear understanding about this especially on the sources of online information they are looking for.

2.5.3 Web Portals: Core to Online Information Access

The importance of guide in locating information especially in the web informed the functions of webporter. This is important to academics in looking for information resources in online environment. Hogan (2009) pointed out that webportal constitutes as important guide to online information access and use. He maintained that: "a webportal or simply portal is a type of gateway website that functions as an "anchor site" and offers a broad array of information resources and services. This offers great opportunity of usage by academics for online information accessibility and usability. Webportals offer services such as online shopping, e-mail support, community forum, current news, current information, weather news, travel information and links to other popular subjects categories. There are wireless portals, designed for web enabled portable devices. Academics can use this to access emails, news, etc. Portals can be public portals.

As academics, you can do three things when you log in on a portal. (i) check the home page for general information (ii) use the subject guide to find a topic you want and (iii) use a keyword to search for a topic, the result of your keyword will be displayed in summary of documents containing the keyword you typed.

Many databases producers make bibliographic or full-text information available to users, which are made available directly by the producer or through a vendor. Vendors are commercial organizations that mount several databases on their host computer. Hartley (1990) asserted that these databases are made available to users for a fee. Whether the user is using the information made available directly by the producer or through the vendor, a fee has to be paid for the service. There are many prominent database which cover several disciplines that meet the need of academics in the universities. Prominent database vendors include: DiaLOG, Data Star, orbit and many others. Dialog covers some disciplines such as science and technology, business and humanities. Data star covers mainly business, biomedical, engineering etc. while orbit concentrates on science, technical and patent information (Aina, 2004).

One of the major challenges of these external databases is the use of command language which some academics may not be conversant with. The language in search of database software must be mastered by academics else it may be difficult to access the data base for needed resources. Most of the databases use different command languages.

Another issue with databases external search is the cost which include charges using a specific database charges related to connection fee, telecommunications and printing. Many of these databases are now available on the internet which academics can access in the most popular online search services.

2.6 Online Information Services

Online information services as already explained infer using computers or some other information devices, connected through a network, to access and use information and services from another computer or information device. Jupiter (2009) saw online information services as a "cooperative university education and research project that enables high-end users to quickly and reliably move huge amount of information over high-speed networks". Online services create platform for academic collaboration, share results of research and much more virtual university services. Online information services link research universities with the enabling infrastructure. This is central in the digital age. Academics can use e-mail messages transmitted over computer network online to exchange views, and ideas with fellow academics for effective and efficient knowledge and services. Instructions are passed using online services to students by academics to help teaching today in our universities. Academics can use the online services for giving students assignments, schedules for classes, and examinations. As supported by Williams and Sawyer (2010) one of the significant services online services provide to academics is the development in education." In the 21st century, online information services are used by academics for distance learning which is known as e-learning, the name given to online services education programmes. In 2009, statistical record shows that five million (5 million) people received lecture materials through online services in the U.S. Kaufman (2001) acknowledge that online resources have brought about radical changes in providing information and services to academics, she concluded that in the 21st century users will have more information available to them and will better serve. Online services will not provide all the information resources needed by academics.

A lot of information can be accessed, such information include Bibliographic, full-text and several million documents over a long distance. Online offers direct communication between the users and the computer system in an interactive mode. Academics can use the computer to directly search databases of their interest using the online. Aina (2004) pointed out that online services are crucial to academics, because online searching is very fast, accurate and comprehensive. A typical online search involves making requests of what is needed through the use of computer, since it is interactive and dynamic.

2.6.2 Online Information Resources in Academic Institutions

In the present dispensation digitization has made it so simple that the society or a nation that has the hardware, software and the human ware can appreciate the services of online information access and use. Dow (2002) maintain that information seekers need to access and use online information services because:

1. Online information services especially value-added online information resources service providers are reliable, authoritative, reviewed and edited resources

2. They are updated and archived; and provide timely access to most up-to-date information along with extensive archives so that information can be retrieved later

3. They provide aggregated information; that is all relevant sources can be aggregated and searchable within a single interface

4. They provide access to the best websites; online services offer important sites that web search engines cannot access and distinguish between truly useful sites and those that have little value

5. They provide full selection of information; journals, analysts reports, historical, daily news and more

6. Online information services provide "Ready-to-download information i.e information can be in a format that is easy to download, e-mail or print

7. They provide updating feature; researchers have an ongoing need for information on specific topics. Electronic clipping services in which all relevant new items are e-mailed to a subscriber on a daily or weekly basis is very helpful.

8. Helping users to access and use online information services is of great importance especially in academic community like Ahmadu Bello University Community (Gbaje and Bot, 2009).

The online information service is providing access to information resources where knowledge is based in academic communities such as universities where higher education and research activities are profound. The use of online information resources is a matter of concern to academic staff and researchers.

The volumes of literature in the library often create problems for them to be accessed and used appropriately. Khan (2009), views that the problems of accessing and use of literature in the library is considerably resolved through the help of information and communication technology. Online information service is used for managing and handling of information and data which have grown significantly even in many least developed countries, despite their economic constraints. The use of online services has affected all aspects of information acquisition, storage and transfers. This has changed the mode of library operations and information services. The electronic-based communication, especially computer based have widened the access and use of information services. It has helped establish linkages to facilitate information transmission, transfer and exchange of files and text. Online information services provide a platform for uploading/downloading, data base access, interactive services, provision of bulletin boards and newsletters. Online information services enable patrons to access information on job submission and execution, teleconferencing, teleordering, interlibrary loans, creating user profiles, consolidation and repackaging of information for specific needs.

Daniel and Choji (2005) supported this by commenting that the importance of using online services is to disseminate information which can be accessed and used in a remote location. Chi-lum (1999) likewise maintained that thousands of monographic materials, journals, learning resources, databases are now made available online in electronic formats which can be accessed from remote locations in the country, thereby increasing access and use of online services for literature and efficient information resources. Aina (2003) sin-qua-non maintained that online information access and use has made users to be independent than before (using traditional library). They can access and use these online electronic resources from their home computers and search databases accordingly for their information needs.

2.7 The Challenges of Access and Use of Online Information Services by Academics

Globalization, digitization, information age, etc. are terms used to describe the present age, a period characterized by information glut that requires the use of electronic means in order to access and use relevant information needed that are made available in the Internet. The application of computer has affected every aspect of human life. These include, defence, education, commerce, health, security, transportation and more importantly science and technology, to list but few. The computer is a multipurpose machine that can be used in all the sectors of any economy, because of its easy use and applications. Obiora (2012) indicated that the "computer remains the major means of communication, information transfer, information access and use, though online takes the application of computer. Ugboma (2006) in her survey study of 19 institutional libraries with a total of 104 librarians found out that basic knowledge of ICT was lacking in about 68% of the respondents. Oketunji (2000) and Adomi (2004) saw the challenges of online information access and use from lack of technical manpower, equipment, cost, electricity supply and lack of full installation of ICT in Nigeria as inhibiting application and use. Though the present government has taken up the challenge to improve the situation there are yet challenges to overcome. Achonna (2008) identified lack of skill in the use of e-journal resources, power outage which limits access and use of the resources and inadequate computers which may hinder Academics from having access to the resources.

Bates (2002) maintained that "Free websites", though are free, are all individually maintained on the web, which makes it difficult to aggregate searches. So researchers must go from site to site looking for the information they need. Also free websites usually do not offer substantial archives of information. The consequence is that an article available one week may be gone next week, and the examples of such websites include: www.nytimes.com, edgar.sec.gov and www.cnnfn.com

Bates also stressed that 'Fee-based websites' although have better selection of materials than free websites, they are still limited in focus. These sites charge for information either on a regular access fee or a fee charge each time a user accesses and downloads a document. A drawback of fee-based websites is that they encourage ad hoc purchases of information and researchers must often provide personal credit card for payment. Most of these websites do not encourage payment by purchase order, which is a serious challenge to online information access and use. Examples of fee-based websites include: www.hooves.com and www.stat.usa.gov.

The value-added websites offer simple but powerful tools which enable researchers to search hundreds of sources, such as current information and archives simultaneously and results can be downloaded, printed or e-mailed. But the challenge is that they charge fees which can be paid with a company purchasing process. The blanket arrangement can provide access to a specified number of users within an organization. The problem remains that, many organizations may find it difficult to subscribe to value-added websites. There are three basic value-added websites and they include: www.dialog.com, www.factiva.com and www.lexisnexis.com

Inability of users to access and use valuable and relevant information resources online affect users in Ahmadu Bello University community.

With the huge advantages of online information access and use it is expected that academics in Ahmadu Bello University ought to have information and communication technology facilities that are functional to enhance access to relevant, current valuable information resources for quality research, academic attainment, competitive intelligence, quality service delivery and poverty eradication.

2.8 Summary of the Review

Literature review which is the focus of this chapter stressed the importance of online information access and use, especially in academic communities by academics. Access and use of online relevant and current literatures, as the global database library and information resources and services, is crucial to higher institutions and academic communities, including Ahmadu Bello University community. There are huge advantages in providing online information access and use though it has its own disadvantages too. Digitization has made the world a global village, in that users seeking relevant information can access and use them with the necessary provision of online facilities. This will enable users to navigate searches for different kinds of information resources which they need online. The whole objective of the global network and online information services is to enable access for resource sharing and global competitiveness.

The literature reviewed in this chapter revealed some factors that affect online information access and use by the university. It also revealed the relevance and weakness of online information services.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter deals with methodology employed for the study. It describes the research design that was adopted, population, the sample, sampling procedure and sample size, the instrument that was used for data collection, the administration of the instrument and the statistical procedure used in analyzing the data.

3.1 Research Method Adopted

A survey research design was employed for this study. The choice of survey research was due to large nature of the population under study. This method involves collecting data about the target population which is group of people or items that are few considered to be true representative of the entire population under study (Anikweze, 2009). As pointed out by Aina (2002), a survey research method seems to be the best method that is suitable for studies where the population is large over a wide area. Bell (1987) pointed that "the aim of a survey is to obtain information which can be analysed and pattern extracted and comparison made and all respondents will be asked the same questions as far as possible under the same circumstances. Information can be collected by means of questionnaire administered by the researcher. It is more appropriate for this study because, survey places emphasis on facts finding (empirical) and the study is on empirical information on access and use of online information services among academics. Sin-qua-non, the survey design is the most appropriate for the study, which was adopted in this research.

3.2 Population of the Study

The population for the study constitutes the academics in Ahmadu Bello University Zaria. There are 12 Faculties, 98 Departments and a Postgraduate school, 12 Institutes and Centres, 7 Libraries, 3 Divisional Agricultural Colleges. Table 3.1 below shows the demographic data of the population.

Table 3.1 shows the analysis of academics in Ahmadu Bello University by Faculty, Department, Gender and Grand Total (Source: MIS A.B.U. Zaria as at 2nd May, 2013.

Academic Staff Statistics by Faculty, Department and Sex, 2013

		Sex		Grand Total
Faculty	**Department**	**F**	**M**	
ABUTH	Radiology ABUTH	1		1
ABUTH Total		1		1
Administration	Accounting	3	34	37
	Business Administration	3	34	37
	Local Govt. and Dev. Studies	2	15	17
	Public Administration	3	24	27
Administration Total		11	107	118
Agriculture	Agric. Econs & Rural Sociology	5	17	22
	Agronomy		19	19
	Animal Science	6	14	20
	Crop Protection	3	16	19
	Plant Science	4	6	10
	Soil Science	5	11	16
Agriculture Total		23	83	106
Arts	African Languages & Culture	2	16	18
	Arabic	1	15	16
	Archaeology	5	12	17
	English & Literary Studies	6	25	31
	French	5	11	16
	Geography		1	1
	History	2	19	21
	Nigerian & African Languages		1	1
Arts Total		21	100	121
Centre	Arewa House	2	6	8
	Biotechnology Research & Training		1	1
	C.D.R.M. & D.S.		1	1
	Centre for Energy Research & Training	6	56	62
	Centre for Islamic Legal Studies	1	10	11
	Iya Abubakar Computer Centre		1	1
	NAERLS	20	118	138
	NEARLS		6	6
Centre Total		29	199	228
DAC	CAAS Kaduna	3	20	23
	DAC HQT		5	5
	KCA Kabba	5	17	22
	SCA Samaru	13	25	38
DAC Total		21	67	88
Education	Arts and Social Science	1	38	39
	Educational Foundation & Curriculum	1	13	14

	Educational Psychology & Counselling	5	8	13
	Library & Information Science	1	12	13
	Physical & Health Education	4	12	16
	Science Education	5	13	18
	Vocational & Technical Education	9	15	24
Education Total		26	111	137
Education	Educational Foundation & Curriculum	1		1
Education Total		1		1
Engineering	Agric Engineering	1	15	16
	Chemical Engineering	2	54	56
	Civil Engineering	2	27	29
	Electrical & Computer Engineering		1	1
	Electrical Engineering		36	36
	Metallurgical & Materials Eng		1	1
	Mechanical Engineering	1	23	24
	Metallurgical & Material Engineering	2	21	23
	Water Resources & Envt. Engineering	1	15	16
Engineering Total		9	193	202
Environmental Design	Architecture	5	34	39
	Building		26	26
	Fine Arts	4	20	24
	Geomatics	1	11	12
	Industrial Design	6	23	29
	Quantity Surveying	2	21	23
	Urban & Regional Planning	2	15	17
Environmental Design Total		20	150	170
IAR	Agric. Library	12	6	18
	Agric. Station Kano		2	2
	Asst. Director Research Office		2	2
	Crop Protection		22	22
	Data Processing	2		2
	Directors Office		2	2
	Farming Systems Research & Extension Programme		2	2
	Monitoring & Evaluation Unit	2		2
	Plant Science	6	34	40
IAR Total		22	70	92
Institute	I.D.R.		1	1
	Institute of Education	10	38	48
	NAPRI	14	52	66
Institute Total		24	91	115
Law	Commercial Law	1	10	11
	Islamic Law		14	14
	Private Law	2	8	10
	Public Law	2	13	15
Law Total		5	45	50
Library	Kashim Ibrahim Library	48	65	113

Library Total		48	65	113
Medicine	Anaesthesia	1	8	9
	Chemical Pathology	1	8	9
	Community Medicine	6	13	19
	Dental Surgery		3	3
	Haematology & Blood Transfusion	1	9	10
	Human Anatomy	3	18	21
	Human Physiology	3	20	23
	Medical Microbiology	3	5	8
	Medicine	4	15	19
	Nursing Sciences	5	9	14
	Obstetrics & Gynaecology	12	12	24
	Ophthalmology	3	4	7
	Orthopeadics & Trauma Surgery		6	6
	Paediatrics	10	11	21
	Pathology Morbid Anatomy	2	8	10
	Psychiatry		3	3
	Radiology & Oncology	1	14	15
	Surgery		27	27
	Traumatic & Orthopeadic Surgery		1	1
Medicine Total		55	194	249
Pharmaceutical Sciences	Clinical Pharmacy & Pharmacy Practice	2	10	12
	Pharmaceutical & Medical Chemistry	5	13	18
	Pharmaceutical & Pharm Microbiology	7	14	21
	Pharmacognosy & Drug Development	4	14	18
	Pharmacology & Therapeutics	8	14	22
Pharmaceutical Sciences Total		26	65	91
Schools	Staff School	3		3
Schools Total		3		3
Science	Biochemistry	6	25	31
	Biological Sciences	13	43	56
	Chemistry	5	32	37
	Geography	2	24	26
	Geology		22	22
	Mathematics	6	55	61
	Microbiology	7	16	23
	Physics		28	28
	Textile Science & Technology	1	19	20
Science Total		40	264	304
Social Sciences	Economics	2	21	23
	Mass Communication	6	24	30
	Political Science	3	31	34
	Sociology	3	19	22
Social Sciences Total		14	95	109
Vet. Medicine	Anatomy	1	9	10
	Medicine	1	21	22

	Microbiology	2	7	9
	Parasitology & Entomology	3	9	12
	Pathology		11	11
	Pharmacology & Toxicology	2	10	12
	Physiology		8	8
	Public Health & Prev. Med.	3	9	12
	Surgery & Radiology	1	8	9
	Theriogenology & Production	2	7	9
	Vet Surgery & Medicine		1	1
Vet. Medicine Total		15	100	115
Vet. Teaching Hospital	Vet. Teaching Hospital	2	15	17
Vet. Teaching Hospital Total		2	15	17
Vice-Chancellor’s Office	Vice-Chancellor’s Office		3	3
Vice-Chancellor’s Office Total			3	3
Grand Total		**416**	**2017**	**2433**

3.3 Sample, Sample Size and Sampling Procedure

This study used Krejcie and Morgan (1999) table to determine the sample size from the given population. The total population of Academics in Ahmadu Bello University is 2,433. According to Krejcie and Morgan table this total population falls within the range of 2,400 and 2,600. Therefore, the sample size is 335. This represents 13.77%.

Table 3.2 shows sample distribution across Faculties, Departments, Institutes and Centres

S/N	Faculty	F	M	Total
1	Administration	2	15	17
2	Agriculture	2	11	13
3	Arts	3	14	17
4	Centre	4	27	31
5	Division of Agricultural Colleges	3	9	12
6	Education	4	15	19
7	Engineering	1	27	28
8	Environmental Design	3	21	24
9	Institutes	7	21	28
10	Law	1	6	7
11	Library	7	9	16
12	Medicine	8	26	34
13	Pharmaceutical Sciences	3	9	12
14	Sciences	6	35	41
15	Social Sciences	2	13	15
16	Veterinary Medicine	3	18	21
	Total	**59**	**276**	**335**

From table 3.2 above 13.77% was used to determine the sample size using Krejcie and Morgan (1973) sample distribution table. Krejcie and Morgan view the sample size of the table from a population large enough to ensure representation of the population. The ideal method according to them is stratified random sampling which gives chance to determine the probability by which members of the population are to be selected. When the sampling is employed whether the sample is large or small the errors of sampling may be estimated giving the researchers an idea of the confidence they place on their findings.

3.4 Instrument for Data Collection

The researcher made use of questionnaire called the Academics Online Information Access and Use (AOIAU) (2013) developed by the researcher for the purpose of this study. AOIAU outline online information services access and use standard that are expected to be possessed by academics in the institutions of higher learning. The instrument is developed with reference to Bates (2004) online information access standard.

The instrument contained five sections. A – Biodata, B – measures the extent of facilities availability for online service delivery. Section C – measures the use of online services. Section D – measures the level of awareness to online information services. Section E – measure accessibility to databases, websites and portals. Section F – measures the purpose for which online services are used. And Section G – evaluates the difficulties encountered on the use of online information services.

3.5 Validity of the Instrument

In order to ascertain the validity of the instrument, the researcher subjected the instrument to research experts, and his supervisors for validation. The instrument was corrected; comments were made by the supervisors to improve the items structure and format for effectiveness.

To be sure that the final copy of the questionnaire is valid for the study, the researcher subjected them to a pilot test for forty (40) academics from Kaduna State University (KASU) which were selected in this study that share similar characteristics in almost all respect. One of the academic librarians assisted in the 'distribution and retrieval of the questionnaires administered by the researcher.

3.6 Reliability of the Instrument

The reliability of the instrument was established after conducting a pilot study within 14 days (2 weeks) in Kaduna State University, 40 academics were issued the research instrument. Input were made on them to have reliable instrument. Asika (2010) pointed out that "reliability is the stability, dependability and predictability of measuring instruments. It is the accuracy or precision of a measuring instrument. The researcher was concerned with both validity and reliability of measuring instrument, because a measuring instrument can be reliable and not valid. In this study the researcher is aware that validity is more important than reliability. But both are very important and useful in determining the usefulness of the measuring instruments.

The reliability of the questionnaires was determined using the data collected from the pilot study. It was statistically analysed for reliability coefficient. The Cronbachs reliability coefficient was used. Consequently, the reliability co-efficient of alpha (α) level of 0.958 was obtained. This reliability coefficient was considered by the researcher adequate enough for the consistencies or reliability of the instrument. As maintained by Spiegel (1992) and also Stevens (1996) that instrument is considered reliable if it lies between 0 and 1 and that the closer the calculated reliability coefficient is to zero, the less the reliability of the instrument, and the closer the calculated reliability coefficient is to 1 the more reliable is the instrument. Therefore, this confirmed the reliability of the instrument used for this study.

3.7 Data Collection Procedure

The researcher with the help of four research assistants administered the instruments. The administration of the instrument was done under strict confidentiality as respondents were given all assurance that their responses will be treated confidentially. The researcher took 4 weeks to distribute and retrieve the questionnaires.

3.8 Method of Data Presentation and Analysis

Frequency tables, bar charts, histogram, pie charts, graph and simple percentages were used to analyse the data. Independent t-test statistics was used for $H0_1$, and $H0_2$ analysis, while paired related statistics was used for $H0_3$.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents analysis of data collected, results and discussion of findings of the study. The chapter is structured into the following sub-headings:

- The response rate of the respondents and analysis of respondents
- Descriptive statistical analysis
- Inferential statistical analysis.

4.2 The Response Rate of the Respondents

A total number of three hundred and thirty-five (335) copies of the questionnaires were distributed to academics in Ahmadu Bello University, Zaria. But two hundred and fifty five (255) questionnaires were responded to and returned. The sum of eighty five (85) questionnaires were not returned. The total number of questionnaires returned constituted 76.1% while questionnaires not returned constituted 23.9%. This response rate attained, took the effort of the researcher in going round to meet with the respondents. Also, this success is attributed to the use of four research assistants and the use of Departmental Secretaries that are conversant with academics in their various Departments and Faculties to distribute and retrieve the questionnaires. The instruments were distributed and retrieved in a period of 6 weeks. It is important to state here that it was very difficult to prevail over academicians to fill these questionnaires. It was discouraging, but with determination and perseverance, we were able to get that high response rate.

4.2.1 Analysis

The analysis is presented in three sections. The first section presents analysis of the distribution of the instrument and the rate of return. It deals with biodata variables of the respondents which include: place of work within the university and gender status.

The second section deals with the six research questions and the objectives, using items frequencies to generate percentages depending on the number of possible modified likert scale options.

The third section tests the three research hypotheses using the inferential statistics of independent t-test statistics for comparison of mean decisions and paired sample related statistics. All the hypotheses were tested at 0.05 alpha level of significance.

Table 4.1 Distribution of Questionnaires and Response Rate according to Respondents Place of Work within the University

Place of work	No. of Questionnaires Distributed	No. of Questionnaires Retrieved	Percent
Administration	17	14	4.2
Agriculture	13	11	3.2
Arts	17	16	4.7
Centres	31	22	6.3
DAC	12	10	2.9
Education	19	13	3.8
Engineering	28	26	7.7
Environmental Design	24	14	4.2
Institutes	28	19	5.6
Law	07	06	1.7
Library	16	13	3.8
Medicine	34	21	6.2
Pharmaceutical Sciences	12	09	3.6
Sciences	41	34	10.1
Social Sciences	15	12	3.5
Veterinary Medicine	21	15	4.4
Total	**335**	**255**	**76.1**

Analyzing the distribution of the instrument Faculty of Science, as revealed by the table, constitute the majority in terms of number of Academics that responded to the questionnaires, they constituted 34 (10.1%). Faculty of Engineering has 26 (7.7%) respondents. Academics from centres constituted 22 (6.3%), institutes constitute 19(5.6%) while Faculty of Law constituted the lowest with 06 (1.7%). The distribution of the instrument was determined based on 13.77% using Krejcie and Morgan (1973) sample table. The general strength of Academics from each faculty, centre or institute was calculated on the above percentage to determine the sample of the respondents from each faculty, centre, institute or library. It is important to note here that the Faculty of Law has the lowest respondents, and coincidentally they had the lowest number of academics, 6(85.7%) of respondents while Faculty of Science that has the highest number of 34(82.9%) respondents.

By implication Faculty of Law though has the lowest number of respondents, has the highest response rate to questionnaires more than any other faculty. This response rate also revealed that a good number of academics especially hose in faculties of Environmental Design and Medicine do not want to answer questionnaires because of the ASUU strike which was going on at that time (July and August 2013.

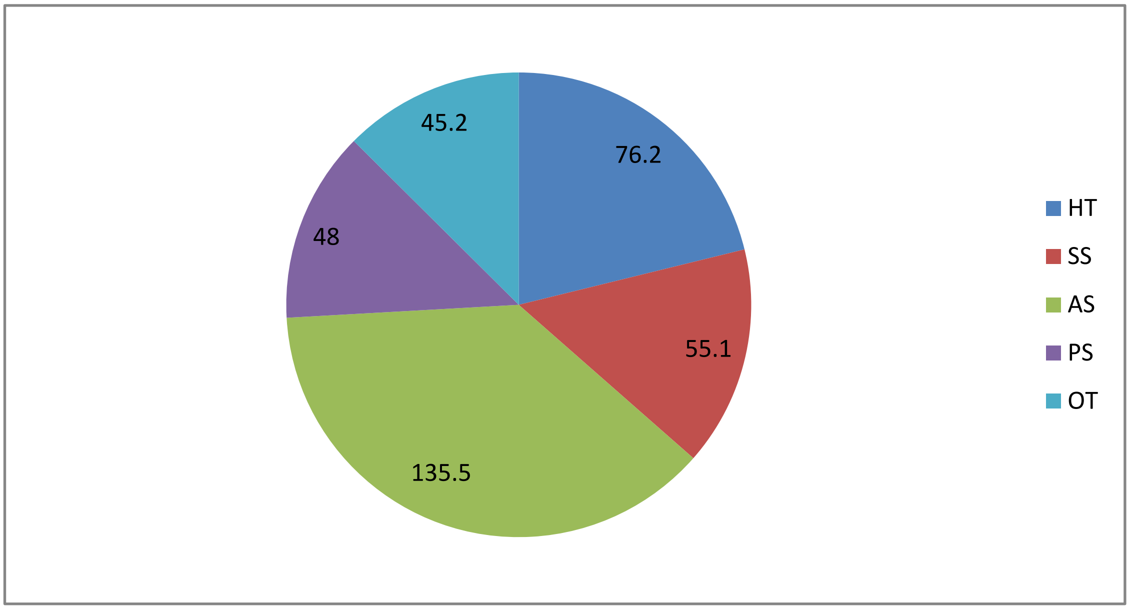
Table 4.1.2: Distribution of Respondents according to Their Academic Disciplines

Academic Discipline	**Frequency**	**Percentage**
Humanities	54	21.2
Social Sciences	39	15.3
Applied Sciences	82	32.2
Pure Science	34	13.3
Others	46	18.0
Total	**255**	**100%**

The table above revealed the categories of respondents categorized according to their academic disciplines. This grouping determines how disciplines can affect access and use of online by academics. Humanities comprising Faculties of Arts, Education, Law and Institutes had a total respondents of 54 (21.2%). Social Sciences discipline comprising Faculty of Social Sciences, Libraries, and Administration had total respondents of 39 (15.3%). Applied Sciences Discipline comprising Faculty of Medicine, Pharmaceutical Sciences, Agriculture, Veterinary Medicine and Engineering had a total respondents of 82(32.2%), while Pure Science discipline comprising of Faculty of Science only had a total of 34(13.3%) respondents. Others constitute Environmental Design, Centres and DAC with total respondents of 46(18.0%).

Based on this grouping we can draw inference here that majority of the academics come from applied sciences discipline, while Pure Science constituted the lowest number of academics in the university.

Figure 4.1: Distribution of Respondents according to Disciplines



Key:

HT	= Humanities	76.2^0
SS	= Social Sciences	55.1^0
AS	= Applied Sciences	135.5^0
PS	= Pure Science	48.0^0
OT	= Others	45.2^0

Table 4.1.3: Respondents according to gender

Gender	Frequency	Percentage
Males	202	79.2
Females	53	20.8
Total	**255**	**100%**

Table 4.1.3 shows the response rate of respondents according to gender. The total instruments distributed to male respondents were 276 while female respondents were 59, making a total of 335 sample size of the respondents. Analysis from the response rate by the female gender is calculated below

$$= \frac{53}{59} \times 100 = 89.8\%$$

Analysis from response rate by the male gender respondents is calculated below $\frac{202}{276} \times 100 = 73.1\%$

Based on this we can simply conclude that female academics response to research instruments more than the males academics. Moreover, female academics response rate ranked higher than the males academics in this finding "Access and Use of Online Information Services among academics in Ahmadu Bello University Zaria. Though the number of female academics is small than the male academics in the university, they portrayed more interest in this study than the male academics. The implication here is that female academics tend to respond to research instruments more than the male academics in a study as this.

Table 4.2: The facilities available for online information service delivery among academics in Ahmadu Bello University Zaria

S/N	Online facilities	Available	(%)	Not available	(%)
1	Fibre optics	204	80	51	20
2	Computer set	187	73.3	68	26.7
3	Wireless fidelity (wifi)	113	44.3	142	55.7
4	CPT cable connection	56	22	199	78
5	Personal website	142	55.7	113	44.3
6	Telephone lines connections	55	21.6	200	78.4
7	Modem	126	49.4	129	50.6
8	Online service providers	121	47.5	134	52.5
9	Smart phones	88	34.5	167	65.5

Analysing the extent of facilities available for online information service delivery among academics in Ahmadu Bello University, the table revealed that responses for the availability of fibre optics constitutes 204(80%). This shows that the university management has done a lot in connecting academics for online information services for service delivery. However 51(20%) of the academics revealed that they are yet to be connected with the fibre optics. The study also revealed that 187(73.3%) of the academics have computer set for online service delivery. However 68(26.7%) academics as revealed, do not have computer set for online information service delivery.

The study also revealed that 200 (78.4%) of academics do not have telephone lines connection for their online service delivery, while 55 (21.6%) of the academics have telephone lines connection for their online service delivery. Also, 199(78%) academics do not have CPT cable connection, while 56(22%) indicated that they have it.

In summary, the table revealed that the facilities available for online information service delivery shows that fibre optics connection and computer set are the most available online facilities for services delivery among academics. On the other hand, the least available facilities for online service delivery include telephone lines connection where 200 (78.4%) revealed that there is non-availability of telephone lines connection for online information service delivery at the period when this study was conducted.

Table 4.3: Level of awareness by academics to online information services in the University

S/N	Online Service	Categories of awareness level				
		Extremely (%) aware	**Moderately (%) aware**	**Somewhat (%) aware**	**Slightly (%) aware**	**Not aware (%)**
1	Internet access	151(59.2%)	53(20.8%)	25(9.8%)	10(3.9%)	16(6.3%)
2	Selective dissemination using e-mails	162(63.5%)	59(23.1%)	9(3.5%)	10(3.9%)	16(6.3%)
3	Digital Repository (D/space)	19(7.5%)	33(12.9%)	38(14.9%)	52(20.4%)	113(44.3%)
4	Online reference services	79(31%)	43(16.7%)	16(6.3%)	40(15.7%)	77(30.2%)
5	Online feeds (RSS feed)	17(6.6%)	22(8.6%)	52(20.4%))	50(19.6%)	114(44.7%)
6	Online tutoring	42(16.5%)	65(25.5%)	49(19.2%)	52(20.4%)	47(18.4%)
7	Online databases	50(19.6%)	81(31.8%)	41(16.0%)	38(14.9%)	45(7.6%)
8	Subject directory (OPAC)	29(11.4%)	56(21.9%)	44(17.3%)	45(17.6%)	81(31.8%)
9	Library web portal	42(16.5%)	13(5.1%)	25(9.8%)	62(24.3%)	103(40.4%)
10	Blogs	20(7.8%)	59(23.1%)	13(5.1%)	34(13.3%)	129(50.5%)
11	Virtual Library MTN	57(22.4%)	57(22.4%)	54(21.2%)	20(7.8%)	67(26.3%)

Table 4.3 revealed that selective dissemination using e-mail has the highest response rate of 162 (63.5%) academics that accessed online services. Number of academics that access it every time is 59 (23.1%) accessed it almost every time, and 9 (3.5%) accessed it occasionally. Also academics using internet access are the next to selective dissemination using e-mail with a response rate of 15 (59.2%) academics who access it every time. 53(20.8%) accessed it almost every time and 25 (9.8%) accessed it occasionally. The least accessed online information services is Online Feeds (RSS feeds) with a response rate of 17(6.6%) of academics who access it every time, 22 (8.6%) access

it almost every time and 52 (20.4%) access it occasionally. Next to it is the Digital repository (D/space) with a response rate of 19 (7.5%) academics who access it every time, 33(12.9%) access it almost every time and 38 (14.9%) access it occasionally.

Generally, the level of accessibility to only information services is fairly okay. However, a good number of online information services are poorly accessed by academics in Ahmadu Bello University Zaria. These include: Digital repository (D, space), online feeds (RSS feeds), Blogs and subject directory (OPAC). The most accessed online information services include: selective dissemination using e-mail, internet access, online reference services and online databases. Access to these online information services is crucial because it determines the use of the online information resources.

Figure 4.2: How academics in Ahmadu Bello University access online information services

UP	= University's Portal	= 83
LP	= Library's Portal	= 37
SE	= Search Engines	= 70
IN	= Internet directly	= 65

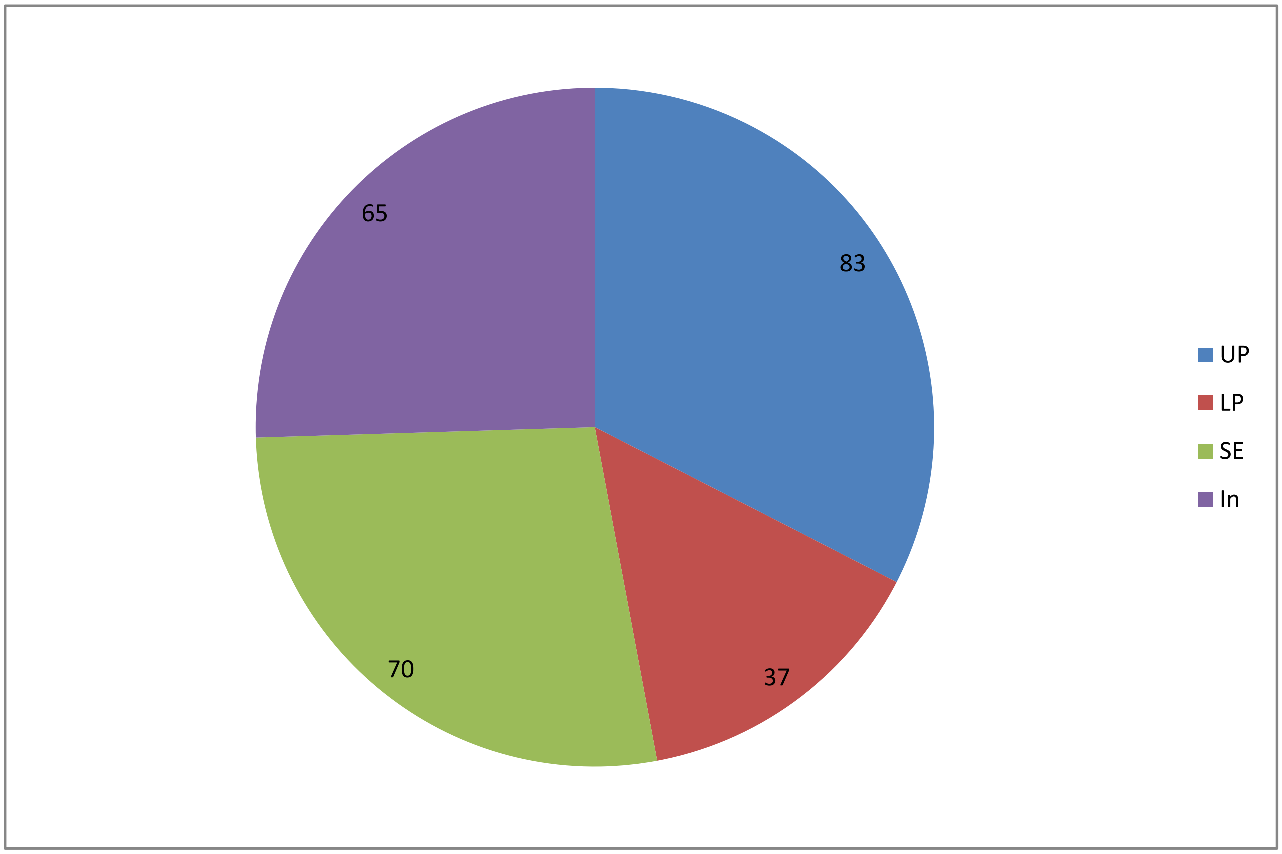


Figure 4.2 revealed that Academics in Ahmadu Bello University Zaria access online information services mostly through the university web portal (83 or 117.2^0 of respondents). The least accessed is the Library Portal with access rate of 37(52.2^0). Most of the online services accessed by academics are not through the library portal. This implies that a good number of the academics do not use the library portal to access online information services.

Table 4.4: The Extent of Use of Online Information Services by Academics in Ahmadu Bello University, Zaria

S/N	Online Information Services	Categories of extent of use				
		Every time (%)	**Almost every time (%)**	**Occasionally (%)**	**Almost never (%)**	**Never (%)**
1	Library web portals	38(14.9)	79(30.6)	87(34.1)	21(8.2)	30(11.8)
2	Blogs	18(7.0)	18(7.0)	71(27.8)	48(18.8)	100(39.2)
3	Internet access	97(38.0)	63(24.7)	46(18.0)	7(2.7)	42(16.5)
4	Selective dissemination using e-mails	86(33.7)	67(26.3)	32(12.5)	32(12.5)	38(14.9)
5	Online feed (RSS Feeds)	8(3.1)	22(8.6)	40(15.7)	58(22.7)	127(49.8)
6	Online tutoring	30(11.8)	36(14.1)	66(25.9)	57(22.4)	66(25.9)
7	Online databases	42(16.5)	38(14.9)	89(34.9)	28(10.9)	58(22.7)
8	Subject directory (OPAC)	26(16.2)	45(18.0)	57(22.4)	42(16.5)	85(33.3)
9	Virtual library (MTN)	16(6.3)	34(13.3)	59(23.1)	46(18.0)	100(39.2)
10	Digital repository	36(14.1)	58(22.7)	36(14.1)	67(26.3)	58(20.7)
11	Online reference	40(15.7)	61(23.9)	35(13.7)	33(12.9)	86(33.7)

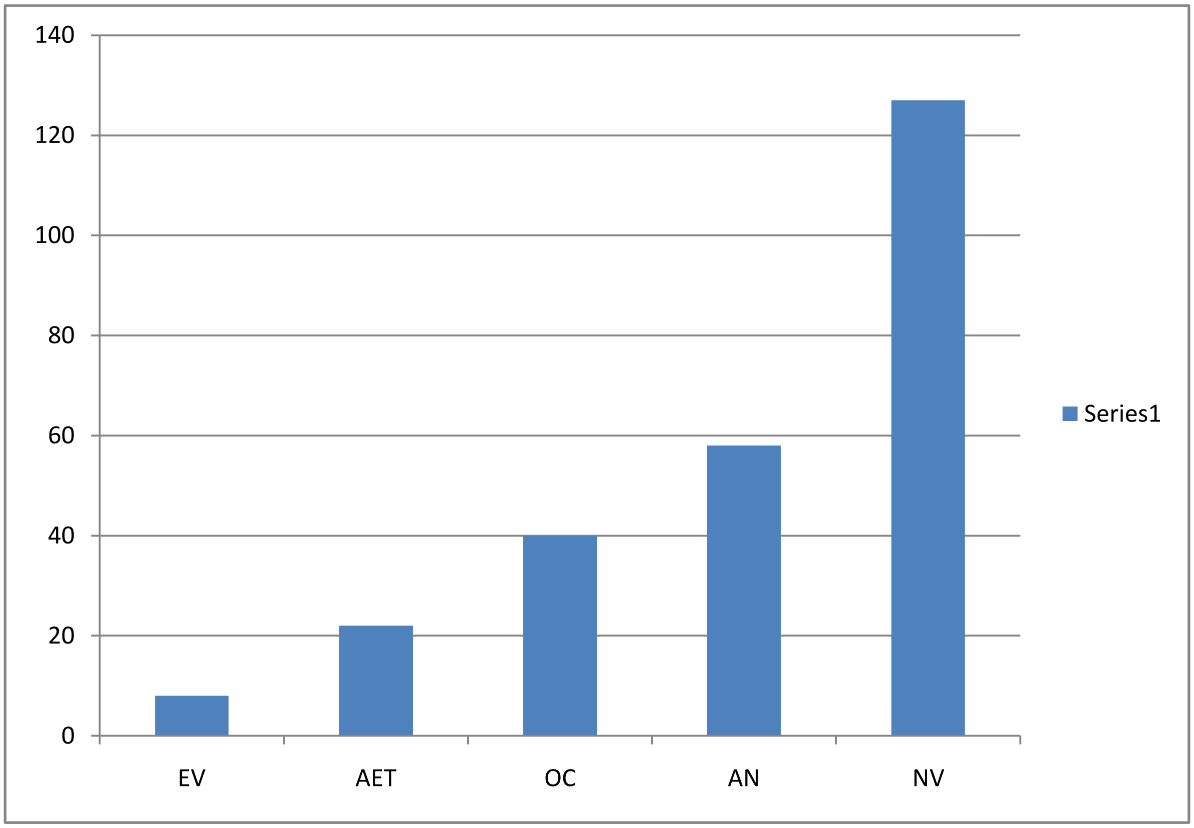
Analysis emanating from Table 4.4 above revealed the extent of use of online information services by academics in Ahmadu Bello University, Zaria. The internet access and selective dissemination using electronic mails are the two mostly used online information services by academics. The study revealed that internet use has the highest rate of respondents of 97(38.0%) who use it every time for their online information services. The reasons for this high response rate stemmed from the fact that internet connect massive networks that connect computers together using the multimedia-based technology that enables academics to use it for textual information. It enables the downloading of resources, audio, video, animation and interactive games. Since it provides a multipurpose online information services, this informed why it scored higher than other services. In a nutshell, the internet provides the networks and creates the platform for multi-uses. The table also revealed that 63(24.7%) of academics use it almost every time, while 46(18.0%) of them use it occasionally. 7(2.7%) respondents almost never use it for their information services, while the rest 42 (16.5%) respondents never use it at all.

In the same vein, the use of selective dissemination using electronic mails scored the second highest rate with 86(33.7%) respondents who uses it every time, 67(26.3%) use it almost every time, while 32(12.5%) of the academics use it occasionally. 32 (12.5%) respondents almost never use it and the rest 38(14.9%) respondents never used it. The reasons for the high use of selective dissemination using e-mails are not far-fetched. Academics use it because it is the most reliable way of sending and receiving messages in online information services. Moreover, selective dissemination using e-mail has become the most common means of online services not only to academics but anybody who has the skills to use it. Therefore, since it is a common means of sending and receiving messages or information every and anytime, these factors justify the use of selective dissemination using e-mails in online information services by academics in the university.

The lowest response rate in the use of online information services is the use of online feed (RSS feed). The table revealed that 8 (3.1%) of the respondents use it every time, 22 (8.6%) use it almost every time and 40 (15.7%) use it occasionally. 58 (22.7%) of the respondents almost never use it and the vast majority of the respondents, numbering 127 (49.8%) never used it. The reason for low use of online feed (RSS feeds) is not far fetched. Most of the academics in many faculties and departments are not aware of most of these online information services.

Generally, looking at the categories of use, the response rate of respondents on almost never and never are indeed higher than the response rate of respondents on the categories of responses to every time, almost every time and occasionally. Therefore, the table in summary, revealed that the number of academics who do not use any information services exceeded those who use them.

Figure 4.3. **Histogram Graphics representation of least used online information services by Academics in the university, the "online feeds (RSS feeds)"**



EV	- Every time	= 08
AET	- Almost Every time	= 22
OC	- Occasionally	= 40
AN	- Almost Never	= 58
NV	- Never	= 127

Table 4.5: Types of academic data bases, websites and portals that are accessible by academics in Ahmadu Bello University, Zaria

S/N	Databases, websites and portals	Level of Accessibility			
		Accessible	%	Not accessible	%
1	Hinari (health and medical services)	97	38.0	158	62.0
2	Agora (Agric services)	89	34.9	66	65.1
3	Oare (urban and env. Services)	40	15.7	215	84.3
4	Jstor (all disciplines)	119	46.7	136	53.3
5	Lantecal (Agric and other related sciences)	21	8.2	234	91.8
6	Egranery (All disciplines)	26	10.2	229	89.8
7	Sabinet SA (Library, legal sciences and social sciences)	21	8.2	234	91.8
8	EBSCO host (All disciplines)	51	20.0	204	80.0
9	Journal of Performance & Art	33	12.9	222	87.1
10	Data star (Nursing, Biomedical allied health care, psychology and psychiatry)	12	4.7	243	95.3
11	Dialog (business, science, engineering, finance and law)	22	8.6	233	91.4
12	National academics press database (All sciences)	39	15.3	216	84.7
13	Co-print in science	36	14.1	219	85.9
14	Digital library for earth system education	18	7.1	237	92.9
15	Online digital library services	47	18.4	208	81.6
16	Virtual libraries	63	24.7	192	75.3
17	Science Direct Library online	80	31.4	175	68.6
18	Law library online	14	5.5	241	94.5
19	Oxford journals	51	20.0	204	80.0
20	e-books online library	96	37.6	159	62.4
21	Online E-books	134	52.5	121	47.5
22	Linguistic library online	30	11.8	225	88.2
23	Gutenberg library online	32	12.5	223	87.5
24	Online encyclopedia service	87	34.1	168	65.9
25	Online reference for business services	41	16.1	214	83.9
26	Reference wiki databases	96	37.6	159	62.4
27	Online library services	40	15.7	215	84.3
28	Discover something great	31	12.2	224	47.8
29	Social sciences research network	22	8.6	233	91.4
30	www.lexisnexis.com	32	12.5	223	87.5
31	www.e-library.com	54	21.2	201	78.8
32	www.findarticle.com	38	15.0	217	85.0
33	www.dialogweb.com	19	7.5	236	92.5
34	www.global.factiva.com	26	10.2	229	89.8

Table 4.5 revealed that, the most accessible types of academic databases, websites and portals by academics in Ahmadu Bello University Zaria are E-books and Jstor. Accessibility to online e-books has the highest response rate of 134 (52.5%). This shows that academics in the university access e-books database more frequently than any of the various databases, websites and portals, while 121 (47.5%) respondents do not access e-books databases. The reasons for high level access of e-books by academics in the university could be due to the needs of current publications relevant to their academic services. Some disciplines like science, technology and medical sciences for examples, require current publications that can meet current demands and current realities. Therefore with poor funding affecting our academic libraries, in the provision current publications especially textbooks, academics find solace in the free websites and free access to databases. Academics find it easy to access needed current publications through e-books data bases. Moreover the response rate of respondents who indicated that they do not access e-books databases constitute 121(47.5%). This considerable response rate could be due to lack of online infrastructural facilities or ICT literacy level. This finding discovered that there is a good number of the academics who have no computers and other ICT facilities for online information services.

Access to Jstor (all discipline) is the second highest response rate with 119 (46.7%) access by academics while 136(53.3%) do not access it. Since Jstor provides information to all disciplines, the reasons for the response rate are obvious. Jstor databases provide information to academics irrespective of their disciplines. But more importantly, it is necessary here to observe that: those who do not access Jstor database are higher than those who access it. Factors responsible could be due to lack of awareness, or lack of information on the services academics can gain from these databases, websites and portals in the university.

Hinari (health and medical services) is also accessible to a good number of academics. Table 4.5 revealed that 97 (38.0%) Academics access it for their online information services. However, 153(62.0%) academics do not access Hinari. This high rate of non-accessibility of Hinari could be attributed to the fact that it is a professional information database that focuses on health and other medical services. A database of this nature is of more benefit to academics in the medical and related disciplines.

The least accessible databases, websites or portals is the Datastar (Nursing, Biomedical, allied health care, Psychology and Psychiatry) with a response rate of 12 (4.7%) respondents who access it for their online information services. 243 (95.3%) respondents do not access it, since it is a discipline that is related to health Database only academics in such related field may access it. Therefore, majority of the respondents not in such fields or disciplines may not access it for their online information services.

Remarkably, the table in general, revealed that a lot of academics in the university do not access a lot of online information services for their information needs due to some challenges that this study aimed at identifying.

Figure 4.4: Graphic representation of the top five (5) accessible Databases, websites, portals by academics in Ahmadu Bello University, Zaria

5 most accessible:

E-books	= 134
Jstor	= 119
Hinari	= 97
Reference wiki dbase	= 96
e-book online library	= 96
Total	**= 542**

Formula $= \frac{n}{\in n} \times 360$

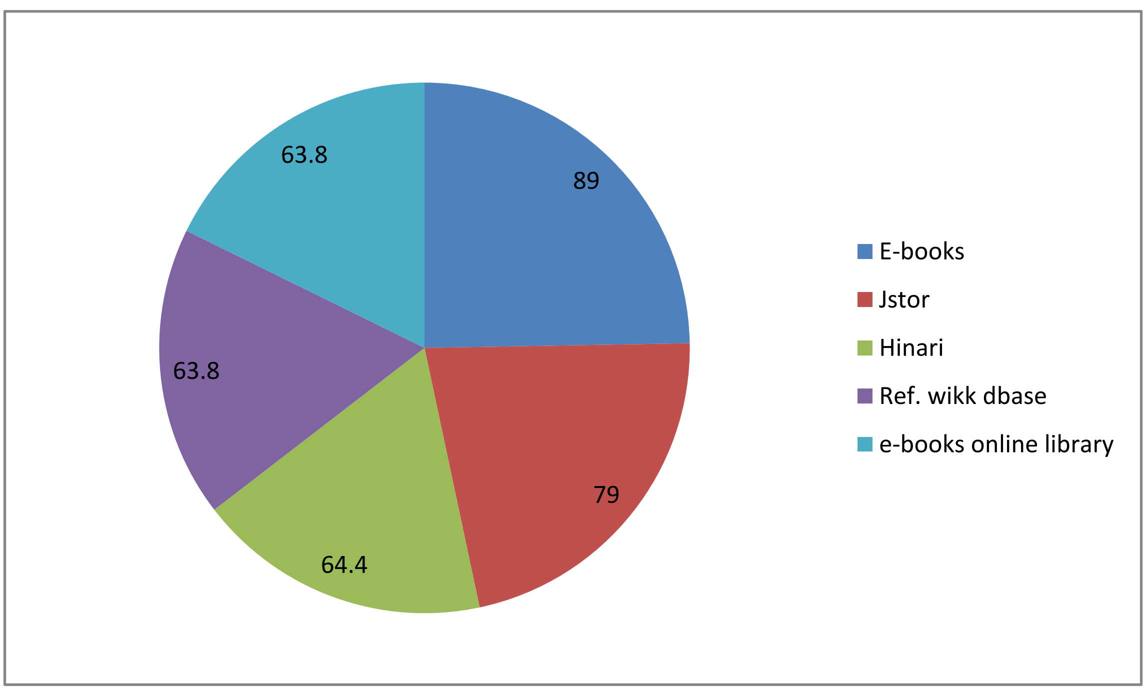


Table 4.6: The Purposes for which academics use online information services in Ahmadu Bello University, Zaria

S/N	Purposes Academics use online information services	Yes	%	No	%
1	Information retrieval	163	64.7	90	35.3
2	Information access	200	78.4	55	21.6
3	Research/publications	223	87.5	32	12.5
4	Information dissemination	130	51.0	125	49.0
5	Learning	205	79.2	50	20.8
6	Scholarly attainment	153	60.0	102	40.0
7	e-mailing	214	83.9	41	16.1
8	Games	78	30.6	177	69.4
9	Receiving news	166	65.1	89	34.9
10	Registration	157	61	98	38.4
11	Social services	118	46.3	137	53.7
12	Job search	89	34.9	166	65.1
13	Conference papers	144	56.5	111	43.5
14	Seminar papers	176	69.0	79	31.0
15	Workshops	108	42.4	147	57.6

Table 4.6: shows the purposes for which academics use online information services in Ahmadu Bello University, Zaria. The study revealed that 223 (87.5%) academics which is the highest response rate, use online information services for research publication while the rest 32 (12.5%) academics do not use it for research publication. It is important to note here that in academics "you either publish or you perish". Therefore this study agrees with Ibrahim (2008) who pointed out that information is one of the most important resources for academics. Academics need information in order to have quality research publication that will bring about academic excellence. Those who indicated

they do not use online information services for research and publication might be facing some challenges in the use of online information services.

Another important purpose for which academics use online information services as indicated by the high score on the table, is for e-mailing. The Table revealed that 214 (83.9%) academics use online information services for e-mailing purposes as against 41 (16.1%) who do not use it for e-mailing. The use of e-mail is of paramount importance in digital age. Since the services of post offices are plagued with so many challenges, the most reliable and the fastest means of sending information to distant places is through the use of e-mailing. Academics use it a lot in carrying out researches. This is because e-mailing is one of the most common online services that can be used by anyone to send and receive information from any part of the world. You need only to open and have an e-mail address to commence the services and use of email.

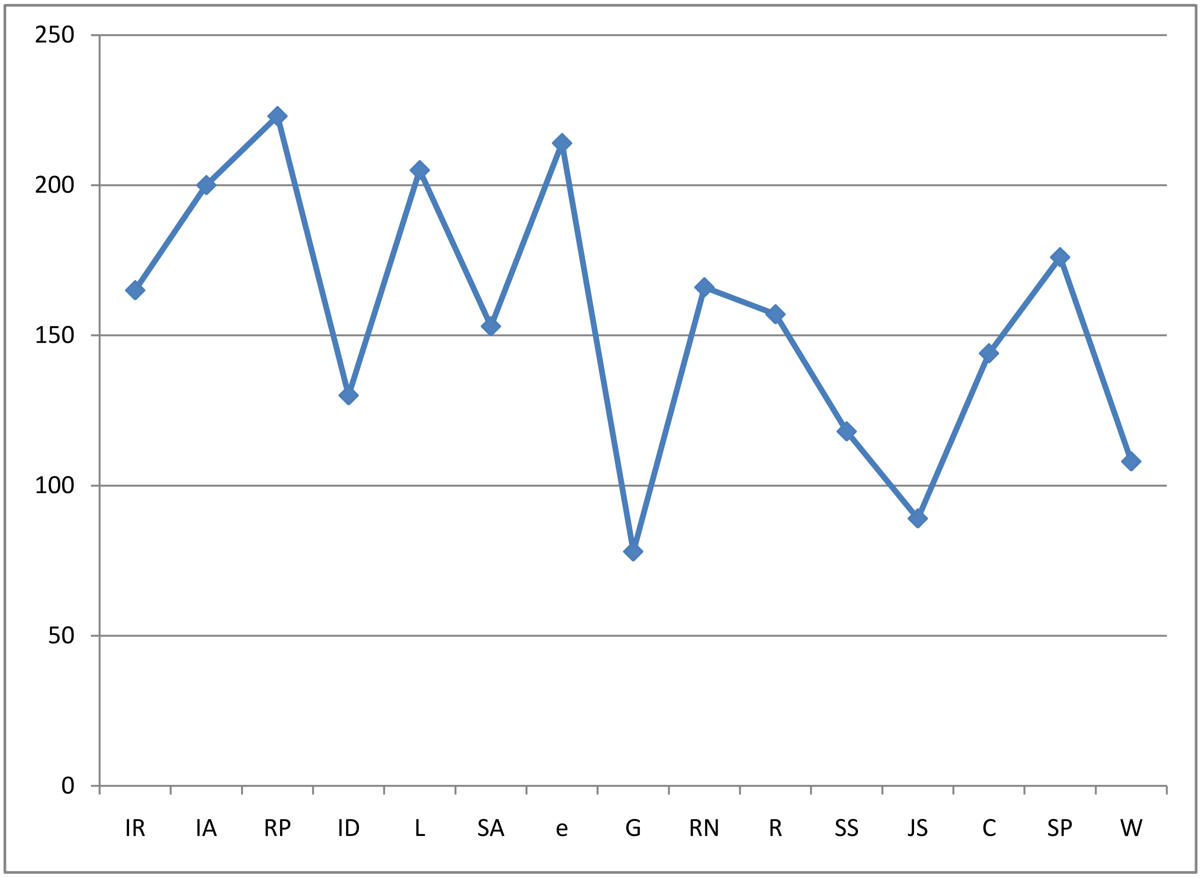
On the other hand, those who indicated that they do not use e-mail for any purpose might have other means of sending and receiving messages. Osei-Bonsu (2000) agreed that "e-mailing is used by academic community in Ghana principally to communicate and interact with people by sending theses, dissertations, external references, co-authoring and publishing of articles. Also e-mails are used by academics for routing memos, agendas, minutes, subscription to discussion lists in their academic disciplines.

Another important purpose for which academics use online information services is learning. This constitutes 205 (97.2%0 of the respondents. Only 50 (20.8%) responded negatively to the use of online services for learning. The concept of e-learning is geared towards education, which enhances learning for everybody including academics. There are important educational materials that can only be accessed through online services. These resources are important to academics especially for learning. The online cognitive tutor for instance, is used by academics for learning new ideas, concepts, information and courses that are difficult or new. This informed a higher rate of respondents for use of online information services for "learning". However, 50(20.8%) of the respondents indicated that they don't use online information services for learning. These categories of respondents might probably have challenges in using online information services, or they belong to old schools of thought who depend solely on library print resources.

The least response rate as to the purpose for which academics use online information services is games. The table revealed that 78 (30.6%) respondents use online services for games, while 177 (69.4%) respondents do not use it for games. Here we can draw an inference that academics do not have much time for leisure, though leisure has its own significance in one's life. A good number of the academics do not have time to use online services for games.

On a general note as observed from the table, academics in Ahmadu Bello University use online services for important issues that affect their service. Though we still have a considerable number of respondents from the table who don't use the online information services for anything. Therefore, there is need for provision of adequate online facilities to encourage academics who responded negatively to the use of online information services.

Figure 4.5: A graphic representation of what academics use online information services for in ABU



Key

IR	- Information Retrieval	165
IA	- Information Access	200
RP	- Research Publication	223
ID	- Information Dissemination	130
L	- Learning	205
SA	- Scholarly attainments	153
e	- e-mailing	214
G	- Games	78
RN	- Receiving News	166
R	- Registration	157
SS	- Social Services	118
JS	- Job Search	89
C	- Conferences	144
SP	- Seminar papers	176
W	- Workshops	108

Table 4.7: Challenges academics encounter in the use of online information services in Ahmadu Bello University Zaria.

S/No	Challenges	Yes	%	No	%
1	Inadequate ICT Skills	88	34.5	167	65.5
2	Poor ICT infrastructure	148	58.0	107	42.0
3	Inability to establish reliability on information accessed for use	65	25.5	190	74.5
4	Time consuming before web pages could open	139	54.5	116	45.5
5	Accessing too many information at a time	38	14.9	217	85.1
6	Inability to follow linkages	33	12.9	222	87.1
7	Accessing irrelevant information that cannot be used	78	30.6	177	69.4
8	Poor search strategies	84	32.9	171	67.1
9	Lack (poor) funding	109	427	146	57.3
10	Lack of seriousness by government	105	41.2	150	58.8
11	Others (bad admin)	29	11.4	226	88.6

Table 4.7 reveals that among the challenges that academics encounter in the use of online information services in Ahmadu Bello University Zaria, the problem of poor online infrastructure was rated high with 148 (58.0%) respondents as against the 107 (42.0%) who indicated that it is not a problem.

It is evident here that the infrastructure made available for online information services in the university is commendable even though a lot is yet to be provided for use in online information services. This agrees with Ukpebor (2011) that the majority of lecturers and students barely access online services due to inadequate infrastructure in the

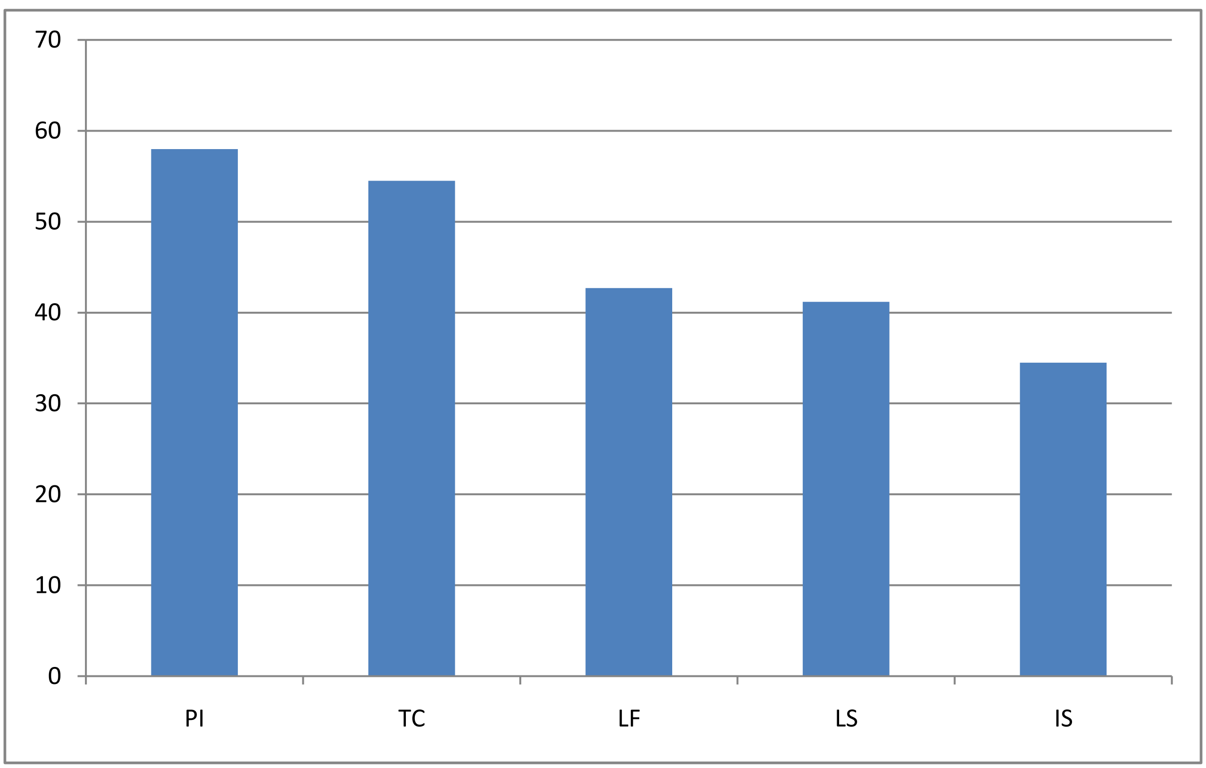
Engineering faculties of University of Benin, Ambrose Ali University and Benson Idahosa university, Edo State. Another serious challenge academics face in the university is the "Time consumed before a web page could be opened," this got a second highest response rate of 139 (54.5%) academics while those who do not see it as a challenge constitute 116 (45.5%). This could be as a result of lack of broadband which makes access to information faster than traditional phone lines etc. Presently, the Federal government is poised to curtail this challenge in our universities, to enhance a faster access to information especially among academics for scholarly attainment and research purposes. There is nothing so frustrating and discouraging in online information services than when one has to wait for a long time before a web page could be opened. If someone is using a commercial café for his online services, he may spend much time than expected and may even achieve nothing at the end. In the same vein, lack of funds is another serious challenge academics in the university have indicated. According to table 4.7 109 (42.7%) respondents agreed that lack of funds affect their online information services in the university, as against the remaining 146 (57.3%) who indicated that lack of funds is not a problem. The least response rate by respondents is on the problem of "other challenges which include poor power supply, administration, distance etc, which constituted a response rate of 29 (11.4%). Those who do not see it as a problem formed the remaining 226 (88.6%).

Generally, as revealed by the table, problems affecting online information services among academics in Ahmadu Bello University among others are unseriousness by government, inadequate ICT skills by some academics, poor online information search strategies, accessing irrelevant information and inability to establish reliability on the information accessed online.

Figure 4.7: Graphic presentation of challenges encountered by academics in the University that constituted higher response rate as revealed on table 4.7 above.

Key:

PT	= Poor ICT Infrastructure	= 58%
TC	= Time Consuming before web pages could open	= 54.5%
LF	= Lack (poor) funding	= 42.7%
LS	= Lack of seriousness by government	= 41.2%
IS	= Inadequate skills	= 34.5%



4.3 Statistical Analysis

This section presents the outcome of the inferential analysis employed to test the two alternative hypotheses formulated for the study. The two hypotheses were tested using independent t-test at $P < 0.05$ level of significance. The independent t-test was used to find out the differences that exist between academics in Pure Science and Social Sciences. Also, to find out the differences that exist in access to online information services was a computed variables for two independent samples between academics in Applied Sciences and Humanities. Therefore the appropriate statistical technique to be used was the independent t-test sample statistics. The findings are presented as follows.

Hypothesis One

There is no significant difference in the use of online information services between academics in pure science and social sciences disciplines.

Table 4.8: Independent t-test sample statistics differences reflect use of online information services between academics in Pure Science and Social Sciences disciplines

Test Variable	Academic disciplines	N	Mean	Std-dev.	Std. error	Df	t-calculated	t-critical	Sig(P)
Use of online information services	Pure sciences	34	66.4412	14.0047	2.4017	71	2.226	1.96	0.029
	Social Sciences	39	55.4615	25.5948	4.0984				

Table 4.8 shows the independent t-test sample statistics on differences that exist in the use of online information services between academics in the pure sciences and the

social sciences disciplines in Ahmadu Bello University, Zaria. Calculated $P<0.5$, calculated $t>1.96$ df 71.

The results of the independent sampled t-test above revealed that significant differences exist in the use of online information services between academics in pure science and social sciences disciplines.

This is because the calculated significance (P) value of 0.029 is less than the 0.05 alpha level of significance, while the t calculated value 2.226 is greater than the t-critical 1.96 value at df 71.

The calculated mean on the use of online information services was 66.4412 for academics in the pure sciences and 55.4615 for academics in the Social Sciences. This implies that academics in pure sciences make use of online information services more than their counterpart in the social sciences. Therefore, the alternative hypothesis which stated that there is significant difference in the use of online information services between academics in pure science and social sciences disciplines is hereby retained.

Hypothesis Two

There is no significant difference in access to online information services between academics in applied sciences and humanities disciplines.

Table 4.9: Independent t-test sample statistics differences reflect access to online information services between academics in Applied Sciences and humanities disciplines

Test Variable	Academic disciplines	N	Mean	Std-dev.	Std. error	Df	t-calculated	t-critical	Sig (P)
Access to online information services	Applied sciences	82	5.4878	4.3297	.4781	134	2.545	1.96	0.030
	Humanities	54	7.2407	4.92179	.66977				

Calculated P < 0.05, Calculated t> 1.96 at df 134

Table 4.9: Independent t-test sample statistics revealed that significant differences exist in access to online information services between academics in applied sciences and Humanities disciplines. As shown on the table, the calculated significance (P) value of 0.30 is less than 0.05 alpha level of significance while the calculated t. value of 2.187 is higher than 1.96 critical t value at df 134. The calculated mean of access to online information services is 5.4878 for the Applied Sciences and 7.2407 by academics in the Humanities. The implication here is that academics in the Humanities disciplines have higher accessibility to online information services than academics in Applied Sciences disciplines. Therefore, the alternative hypothesis that stated that there is significant difference in access to online information services between academics in Applied Sciences and Humanities disciplines is hereby accepted (retained).

Hypothesis Three:

There is no significant difference between access and use of online information services among academics in Ahmadu Bello University, Zaria.

Table 4.10: Paired sample related statistics between level of access and use of online information services among academicians in Ahmadu Bello University, Zaria

Variables of online information services	**N**	**Mean**	**Std. dev**	**Std. err**	**Df**	**T cal.**	**T. crit.**	**P (sig)**
Accessibility	255	41.9176	9.31117	.58309	254	22.185	1.96	0.000
Uses	255	39.8275	9.32535	.58398				

P calculated < 0.05 t calculated > 1.96 at df 254

According to the paired sample statistics above, significant difference exist in the level of accessibility and usage of online information services among the academics of Ahmadu Bello University, Zaria. Reason being that the calculated p value of 0.000 is less than the 0.05 alpha level of significance and the calculated t value of 22.185 is higher than the t critical value of 1.96 at df 254. The mean accessibility and use levels are 41.9176 and 39.8275 respectively, showing that they had higher level of accessibility to online information services than the usage of the online information services among the academics of Ahmadu Bello University, Zaria. Therefore, the null hypothesis which state that there is no significant differences between access and use of online information services among academicians in Ahmadu Bello University Zaria, is hereby rejected.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summaries of the study and major findings. Moreover the chapter drew conclusions and recommendations were also provided based on the findings of the research work. The chapter concludes by suggesting areas for further studies.

5.1 Summary of the Study

The study was intended to enhance better understanding of the extent to which online information services are access and use by academics in Ahmadu Bello University, Zaria, to facilitate teaching, learning, research and development. The study was intended to determine the use and access of online information services by academics, this was to go a long way in helping academics in scholarly attainment, quality education, research, teaching and discover challenges faced by academics in online information services in the university.

To achieve these noble objectives six research questions and three null hypotheses were formulated and tested. The research questions sought to determine the extent to which facilities are available for online service delivery, the awareness of online information services, extent of access and uses of online information services, how academics accessed online information services, types of academic databases, websites and portals accessible by academics, to examine the purposes for which academics use online information services and also to find out the challenges academics have in access and use of online information services in the university. On the other hand, the null hypothesis sought to determine the difference in the use of online information services between academics in Pure Sciences and Social Sciences. Also the hypothesis was to examine difference in access of online information services between academics in applied sciences and humanities disciplines and the difference in access and use of online information services among academics in Ahmadu Bello University Zaria.

A survey design was employed for this study. The entire 2433 academics were sampled using Krejcie and Morgan (1973) table sample distribution in which a sample size of 335 (13.77%) was drawn. The researcher used 4 research assistants and Departmental Secretaries and personally went round four times to various faculties, centres, libraries and institutes to collect data for the study. The instrument used for the data collection was the questionnaires called Academics Online Information Access and Use (AOIAU) 2013 which was developed by the researcher for the study.

The data collected for the study was analysed using both descriptive and inferential statistical techniques. Frequency tables, percentages, histograms, pie charts and bar charts were used for the descriptive statistics. On the other hand, independent t-test was used to test all the two null hypotheses formulated to determine differences that exist among academics of various disciplines in the university. Also, paired sample related statistic was used to test hypothesis three which was to determine the differences that exist between access and use of online information services among academics.

5.2 Summary of Major Findings

Based on the data collected and analysed for this study, the major findings are as follows:

1. The extent of availability of facilities for online information service delivery among academics in Ahmadu Bello University. The major facilities available from the study are fibre optics and computer sets. The study also revealed the non-availability of the following facilities: telephone lines connection, wireless fidelity (wifi), smart phones, online service providers, and modem.
2. On the level of access, the study revealed that selective dissemination using e-mail has the highest response rate of 162 (63.5%) academics who access online information services every time. The least accessed online information services is online feeds (RSS feeds) with only 17 (6.6%) academics who access it every time. The general level of access is fair but a good number of online information services such as Digital repository (D. space), online feeds (RSS feeds), Blogs and subject directory are poorly accessed by academics.
3. The study equally revealed that academics use internet access more than any other online information services with 97 (38.0%) academics who use it every time. Online feeds (RSS feeds) is the least used online information services by academics in the university. Generally the use of online information services among academics is relatively low.
4. On the types of databases, websites and portals accessible by academics, this study revealed that academics access online E-books in high level, and do not access Data Star, Law library online, Digital Library for earth system education,

Sabinet SA, Dialog, Lantecal, and www.dialogweb.com. Generally, there is moderate accessibility to databases, websites and portal by academics in the university.

5. The finding also identified the purposes for which academics use online information services in the university. They use them for research publication, e-mailing, learning, information access, receiving news, information retrieval, registration, scholarly attainment and seminars. Academics do not use online information services for: games, job searching and social services.
6. On the challenges encountered by academics in the use of online information services, findings discovered that academics have challenges mostly on the time consumed before a web page could be opened. Poor power supply is another challenge identified in the findings.
7. With regard to the hypotheses tested in the study, the study found that there was significant difference on the use of online information services between academics in Pure Sciences and Social Sciences disciplines in the university.
8. There is significant difference in the access to online information services between academics in Applied Sciences and Humanities disciplines in Ahmadu Bello University, Zaria.
9. There is also significant difference between access and use of online information services among academics in Ahmadu Bello University, Zaria.

5.3 Conclusion

Based on the analysis and the findings of the study, it could be deduced that there is low access and use of online information services. There is an appreciable level of awareness of most of online information services by academics in the university. Generally, there is low accessibility to databases and web portals. The major challenge faced by academics in the access and use of online information services is the narrow bandwidth, which leads to the problem of time consumption when opening a web page.

5.4 Recommendations

From the findings of this study the following recommendations are forwarded:

1. There should be a continuous study on access and use for online information services by academics in the university.
2. Also, there is need to organize seminars or workshops to intimate academics with various online information services that can be accessed and used.
3. More measures could be taken to educate/train academics on the need to use online databases, websites and portals for their online information services, especially for academic attainments, research, publication, academic excellence and global competitiveness.
4. The use of various online information services by academics is not encouraging enough to some level. Sequel to, the university management need to expedite action on encouraging and supporting academics more importantly on the issue of access and use of online information services.

5. On poor funding, the university can improve the condition by liaising with private organisations, Alumni, private individuals to contribute for this noble demands.

5.5 Suggestions for Further Study

Arising from the findings and conclusions of the study, the following are areas suggested for further studies.

1. Access to online facilities among senior non-teaching staff of Ahmadu Bello University, Zaria.
2. Access and Use of Databases, or websites by undergraduate students in Applied Sciences disciplines.
3. Use of online information resources by undergraduate students in Social Sciences and Humanities disciplines.
4. Assessment of online information services for relevance and use by staff of Ahmadu Bello University, Zaria.

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QUESTIONNAIRE

Biodata:

Indicate by ticking (√) your working place.

i. Faculty ( )

ii. Institute ( )

iii. Centre ( )

iv. Library ( )

v. State your Department ____

SECTION A

Please indicate by tick (√) the online information services readily available for your services in the university.

AV = Available

NA = Not Available

Facilities	AV	NA
Fibre optics connection		
Computer set		
Wireless fidelity (wifi)		
Cpt cable connection		
Personal website		
Modem		
Online service provider		
Smart phones		
Telephone lines connection		

SECTION BI

Through which means did you become aware of the availability of online information services in the university? Tick (√) those that are applicable.

i.	Conference	( )
ii.	Seminar	( )
iii.	Colleagues	( )
iv.	Students	( )
v.	Library	( )
vi.	Management Information System (MIS)	( )
vii.	University Postal	( )
viii.	Notice Board	( )
ix.	Bulletins	( )
x.	Workshops	( )
xi.	Mass Media	( )
xii.	Research publications	( )
xiii.	Librarians (information officers)	( )
xiv.	Information and protocol unit	( )
xv.	University's ICT unit	( )
xvi.	Others specify	( )

SECTION B2:

Indicate by a ticking (√) the level of use of online information services made available for your access and use in the university.

1 - Never

2 - Almost never

3 - Occasionally

4 - Almost every time

5 - Every time

Resources	**1**	**2**	**3**	**4**	**5**
Internet access					
Library web portal					
Blogs					
OPAC (subject directory)					
RSS feed (online feed)					
Online databases					
Virtual library (MTN)					
Digital Repository (D space)					
Selective dissemination using e-mail					
Online tutoring					
Online reference services					

SECTION B3

How do you access the online information services? Tick (√) the one applicable to you.

a. Through the university web portal ( )

b. Through the library portal ( )

c. Through search engine ( )

d. Go directly to the internet ( )

SECTION C

Indicate the frequency types of the online information services that are accessible to you in the university.

1 - Never
2 – Almost Never
3 – Occasionally
4 – Almost every time
5 – Every time.

Online Information Services	**1**	**2**	**3**	**4**	**5**
OPAC (subject directory)					
Library web portal					
Blogs					
Internet access					
RSS feed (online feed)					
Online databases					
Virtual library gateway (MTN)					
Digital Repository (D space)					
Selective Dissemination					
Online tutoring					
Online Reference Services					

SECTION D

Indicate the types of databases/web portals you access for your information needs. Tick (√)

Database/Web Portal	
Hinari (Health and medical services) Agora (Agricultural services) Oare (Agricultural services) Jstor (All disciplines) Lantecal (Agric and other related sciences) Egranery (All discipline) Sabinet SA (Library, legal science and social sciences) EBCOhost (All disciplines) Journal of Performance and Art Datastar (Nursing, Biomedical, allied health care, psychology and psychiatry Dialog (Business, Science, Engineering, Finance and Law) National Academic Press Database (All Sciences) E-print in science Digital library for earth system education Online Digital Library services Virtual libraries Science Direct Library online Law Library online Oxford Journal e-books online library e-books online Linguistic library online Gutenberg library online Online encyclopedia services Online reference for business services Reference wiki databases Online library services Discover something great Social science research network www.lexisnexis.com www.e-library.com www.findarticle.com www.dialogweb.com www.global.factiva.com	

SECTION E

Tick below as many as possible. What do you use online information services for?

Information retrieval	( )
Information access	( )
Research publications	( )
Information dissemination	( )
Learning	( )
Scholarly attainment	( )
e-mailing	( )
Games	( )
Receiving news	( )
Registration	( )
Social services	( )
Job search	( )
Conference	( )
Seminar papers	( )
Workshops	( )

List others not on the list ____

____

SECTION F:

Indicate the challenges you face in access and use of online information services in the university. Tick as many as possible.

Inadequate ICT skills	( )
Poor infrastructure	( )
Inability to establish reliability on information accessed for use	( )
Time consuming before web page could open	( )
Accessing too many information at a time	( )
Inability to follow linkages	( )
Accessing irrelevant information that cannot be used	( )
Poor search strategies	( )
Lack of fund	( )
Lack of seriousness by government	( )

Others, specify ____