

AN ASSESSMENT OF AVAILABILITY, AWARENESS AND USE OF
ELECTRONIC RESOURCES AND SERVICES IN THE LIBRARIES OF THE
KADUNA STATE TERTIARY INSTITUTIONS

BY

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MLS/EDUC/01328/06-07

A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD
OF THE MASTERS IN LIBRARY SCIENCE

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

FACULTY OF EDUCATION

AHMADU BELLO UNIVERSITY

ZARIA

OCTOBER 2011

DECLARATION

I hereby declare that this thesis has been written by me in the Department of Library and Information Science; and that it is a record of my own research work. It has not been presented in any previous application for higher degree. All quotations are indicated by quotation marks and sources of information are specifically acknowledged by means of references.

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CERTIFICATION

This thesis entitled: **An Assessment of Availability, Awareness and Use of Electronic Resources and Services in the Libraries of the Kaduna State Tertiary Institutions** by Yunana Titus Gwazah meets the regulations governing the award of Masters in Library science of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to my late father and mother Mr and Mrs Yunana M. Kukah who laid the foundation of what I have become today.

AKNOWLEDGEMENT

All Praise, glory, honour and adoration I give to the Almighty God for special favours I received during this period of academic exercise

To Prof. Innocent Isa Ekoja my main supervisor, I am exceedingly grateful for unreserved patience in providing guidance. I am also indebted to Dr. K.A. Momoh my second supervisor, Prof. Umar Ibrahim, Dr. Ezra Gbaje, Mr. Baba Aduku, Emmanuel Nnachi, and Levi D. Nayari who did the typing work.

I acknowledge with appreciation the cooperation and assistance I received from staff and students of the various institutions studied.

Special thanks to my wife, Alice T. Yunana for support, love and patience when I had to leave the responsibility of taking care of the family during periods of my absence for the programme.

Time and space will not allow me to mention everybody. However, I acknowledge and appreciate, all those, who in one way or the other, contributed to my success in this programme. I pray for God's blessings and guidance for all of you.

ABSTRACT

The purpose of this study was to investigate the availability of electronic resources and services and the extent to which these resources were being used in the selected tertiary institutions in Kaduna state. A survey research method was used to conduct this study and the instruments used for gathering data were questionnaires, interviews and observations. The population of the study was the users of the libraries of the state owned tertiary institutions. A stratified purposive random sampling was used to draw a sample size of 1323 from the selected institutions. Responses from the questionnaires were analyzed using descriptive statistics. To do these, two statistical tools – the t-test was used to test for differences in the provision of electronic resources and services among the institutions, and the PPMC was used to test relationship in awareness and use of the electronic resources and services in the selected institutions.

The findings showed that all the selected institutions had the following e-resources – computers, VCD/DVDs, Internet access, full text articles, online data bases, e-journals, e-books, multimedia, CD-ROMs, and flash drives. They also used the following electronic services – E-mails, online references, electronic alerts. All the institutions studied depended on the Education Trust Fund (ETF) intervention to provide them with the necessary electronic resources instead of the normal government funds which may or may not come. There was a significant difference in the quantity, awareness created and use of electronic resources and services among the selected institutions. It is therefore recommended that government should provide adequate funds for the provision of electronic resources and services to enhance teaching, learning, research and training.

ABBREVIATIONS

AACR:	Anglo-American Cataloguing Rules
CD-ROM:	Compact Disc Read only Memory
CULNU:	Committee of University Librarians of Nigerian Universities
DARPA	Defense Advanced Research Project Agency
DVD-ROM	Digital Video Disc Read Only Memory
ETF	Education Trust Fund
GGSPU	Guru Gobind Sing Indrapastha University
ICT	Information and Communication Technology
IITA	International Institute for Tropical Agriculture
KASU	Kaduna State University
KSCOE	Kaduna State College of Education
LJMU	Liverpool John Moore University
MIT	Massachussetts Institute of Technology
NBP	Nuhu Bamalli Polytechnic
NULIB	Nigerian University Librarians consortium
OPAC	Online Public Access Catalogue
PPMC	Pearson Product Moment Correlation
SICHST	Shehu Idris College of Health Science and Technology
USIS	United States Information Service
WAN	Wide Area Network
WWW	World Wide Web

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The traditional library consists of information resources in printed form. Its task has been to collect, process, store and disseminate information for the purpose of reading, teaching and consultation. The information, largely in print form, has been the most widely accepted format for providing information and library services to satisfy the needs of library users. Today this is being replaced by electronic or digital resources that meet the needs of researchers and information seekers. In this light, Dahi, et al (2006) posited that libraries that cling to traditional service models in an era of new information technology, rising costs and flat budgets cannot thrive.

At a time of ever increasing demand for information, libraries must keep abreast of developments in information technology and advanced communication to enable them provide services that today's society both expect and need. It was in recognition of this that Iljon (1998) observed that the convergence of computing and communication technologies impact significantly on the way in which information resources are created, managed and used; therefore, libraries need to plan and implement systems which will take advantage of this development.

Rosenberg (2005) opined that the changing academic environment and the recognition of the role of electronic resources in libraries has brought about a transformation which includes an investment in electronic infrastructure and connectivity and electronic learning, which calls for new approaches in providing library services to enhance the quality of higher education.

The fact that libraries empower users by providing access to the broadest range of information, availability of electronic resources, including information via the internet, can enable libraries to fulfill this responsibility better than before. Availability of electronic resources refers to ready access to information in electronic format with little or no stress to the library user. Availability of electronic resources in the library is not just enough, users must know of their existence to be able to use them effectively; and to be able to use them the users must possess requisite skills that will enable them to exploit these resources and services.

As a concept, electronic resources stand for those electronic information resources that users access electronically via a computing network from inside the library or remote to the library (Shim et al 2001). According to A.L.A, 2005 update, as cited in Weitzh (2006), an electronic resource is a material (data and or programme) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g. CD-ROM) or a connection to a computer network (e.g. Internet). The concept of electronic resources consist of texts, audio, visuals, graphics and animations in nature that are accessible through the aid of digital technologies. Ideally, these should provide users access to electronic information resources via electronic means. However, this definition also includes electronic resources such as databases on standalone Personal computers, information on CD-ROMs that may not be accessible through the Internet or other networks. Tammaro (2006) observed that electronic resources include websites, online databases, e-journals, e-books, CD-ROMs, audio visual, multimedia, etc.

Electronic services refer to activities carried out electronically to satisfy the intended users, these may include mail based services, bulletin board for libraries, online

public access catalogue (OPAC), Portals and gateways and the Internet. (Mulla and Chandrashekera, (2005). Electronic services have boosted a fundamental change in library services, instead of users coming to the library, the library reaches the user with information. This shift is the outcome of the introduction of current awareness and selective dissemination of information (SDI) services. Electronic information services have help libraries to strive towards end user empowerment, linking patrons with information without any intermediary agency.

Electronic sources of information have introduced changes to the services and operations of modern libraries. Computing trends have enabled low cost digital storage of information, rapid transmission of data across computer networks and sophisticated retrieval, and processing of electronic documents and information. Against this background of increased availability of information and the technological innovations, libraries are developing new and revolutionary methods of providing users with access to ever increasing amount of information.

The availability of electronic resources in libraries and their use to retrieve valuable information is the reason for the paradigm shift in the role of the traditional library services to those of an electronic or digital library. A study of availability or the perceived provision of electronic resources in libraries will show the extent to which libraries are meeting the information needs of users and the extent to which users of digital resources are achieving their goals in doing assignments, teaching and research.

One of the goals of the library in the electronic age is to provide information and services that will fulfill the patron's needs and this informed Torma and Vakkari's (2004) observation that the availability of relevant electronic resources affects how frequently scholars use them. According to Abel et al (1996) and Eason et al (2000), the provision

of electronic resources varies among disciplines. They are most available in the sciences and medicine and least in the social science and humanities.

To promote electronic resources and services use, Weingart and Anderson (2000) observed that libraries spend a substantial percentage of their budgets on acquiring and making them available for users. These resources provide access to information far beyond the limits of the libraries' print collections. To effectively use the electronic resources and services, users must know of their existence. It is the responsibility of libraries that have acquired these resources and offer the services to bring to their customers the awareness of such resources and services..

Information professionals have long asked questions to find out what makes an individual to seek out information. Where does the information seeker find the information to satisfy his information need? These questions, according to Kibirge and Dapalo (2000), are of greater importance for the fact that people are using the internet to find information that is unmediated by the library. Electronic resources provide these services better and as Ibrahim (2004) observed, library users are no longer obliged to visit the library at regular opening hours to meet all their information needs. They may search the libraries' on-line catalogues, use a subject guide or database to access a citation from the internet or access a full text article from web-based journals, they may browse electronic journals or electronic books.

Mutula and Ojedokun (2008) opined that digital library resources and services are increasingly being implemented by several agencies – government, private sector, and tertiary institutions, etc because they make research easier for scholars and may ease budgetary constraints associated with the acquisition of print resources. They help to reduce preservation problems or help libraries extend collections into new media. Above

all, they help to make information readily available. It is in the same vein that Waldman (2003) observed that undergraduate students look for the fastest way that will lead to satisfactory results when doing research. Therefore, they go for electronic information sources first. Electronic resources and services are sought after not only by undergraduates, but by every student at all levels of tertiary institutions.

Tertiary institutions are institutions where higher education is provided. Higher education is the post-secondary, non-compulsory educational level following the completion of a school providing secondary education. Tertiary institutions provide higher or tertiary education, which is normally taken to include undergraduate and postgraduate education as well as vocational education and training. Akintoye (2008) observed that the tertiary system of education is composed of universities, polytechnics, institutes of technology, and colleges of education that form part of or are affiliated to universities and polytechnics, colleges and professional specialized institutions. They also include professional schools in such fields as law, theology, medicine, business, music, and arts. At the end of a prescribed course of study a degree, diploma, or certificate is awarded.

Tertiary institutions play different roles in national development. Okpareke (2007), and Akintoye (2008) noted that the role of tertiary institutions include manpower development, research and development, moral development, and training of players in the informal sector.

Libraries are an integral part of tertiary institutions. In providing services to their intended customers, libraries have to be dynamic institutions by responding to their needs in terms of the nature, content and vehicle in which information is disseminated.

Electronic information resources and services are topical issues in information delivery in all types of libraries, including the libraries of tertiary institutions.

It is against the above background that this work was conducted so as to investigate the availability, awareness and use of electronic resources and services in selected tertiary institutions of Kaduna State.

1.2 **Statement of the Problem**

The basic role of the library in the electronic age is to provide information and services that will meet the patrons' needs. Mulla and Chandrasheker (2006) pointed out that libraries have witnessed tremendous shift in collections, services and access to resources since the 1990s. Computers and computer applications are widely being introduced and libraries provide access to a great wealth of electronic resources, some of which include e-books, e-journals, major bibliographic databases, and Internet resources. The introduction of these information resources into the information industry as an alternative source of information to the library user and the ease with which information can be accessed and retrieved from these resources reduced the reliance of library users to information in the print format.

With this drift from the traditional print materials to networked information resources, the dawn of a new era in library and information services and access to resources has risen in harmony with the worldwide information revolution. Electronic resources and networking services have broken through the time and place barriers of print materials. Libraries that provide electronic resources are increasingly being implemented by several agencies because they make research easier for scholars and may ease budgetary constraints associated with the acquisition of print resources. Digital journals can be linked from and to indexing and abstracting databases. Access can be

from the user's home, office or dormitory whether or not the physical library is open, the library can get usage statistics that are not available for print collections.

The report of the Association of Research Libraries cited by Ibrahim (2004) indicated that "an ever increasing portion of library collections' dollars are committed to the purchase of networked services. Yet relatively little is known about how these services are used, who uses them, and what the over all impact of these services is". Similarly, Ray and Day (1998) pointed out that Universities use considerable proportions of their budgets to provide this technology for their students to assist in the learning process. How do students and teachers themselves feel about the availability of electronic information, which may require the acquisition of new skills to utilize effectively? Little is known about the users' attitude towards this form of information provision and without a better understanding, it is difficult for service providers to know if they are meeting the needs of users effectively.

It is with the above scenario in mind that a research into the Availability, Awareness and Use of Electronic Resources and Services in the Tertiary Institutions of Kaduna State is desirable. It is tempting to ask whether electronic resources are available in their libraries ? If not, are there efforts to develop them? This investigation is necessary to determine whether they exist or not, and if they do, are users aware of their availability, and use them. The study also investigated the problems encountered in the course of using the available electronic resources and services.

1.3 Research Questions

The research questions for this study are as follows:

1. Are electronic resources available in the libraries of tertiary institutions of Kaduna State?

2. What types of electronic resources are provided in the libraries of the tertiary institutions of Kaduna State?
3. What are the electronic services provided to users of electronic resources in the libraries of tertiary institutions of Kaduna State?
4. How are patrons made aware of the availability of electronic resources in libraries of the tertiary institutions of Kaduna State?
5. To what extent are the electronic resources used in the libraries of the tertiary institutions of Kaduna State?
6. What factors hinder the use of electronic resources and services in the libraries of tertiary institutions of Kaduna State?

1.4 Hypothesis

1. There is no significant difference in the provision of electronic resources and services in the libraries of the tertiary institutions of Kaduna State.
2. There is no significant difference in the availability and use of electronic resources and services in the tertiary institutions of Kaduna State.
3. There is no significant difference in the awareness of the availability and use of electronic resources and services in the tertiary institutions of Kaduna State.
4. There is no significant relationship between awareness and use of electronic resources and services in the tertiary institutions of Kaduna State.

1.5 Objectives of the Study

The following are the objectives of the study

1. To identify what types of electronic resources are provided in the libraries of the tertiary institutions of Kaduna State?

2. To identify the types of electronic resources that are provided in the libraries of the tertiary institutions of Kaduna State.
3. To identify the electronic services provided to users of electronic resources in the libraries of tertiary institutions of Kaduna State.
4. To determine if information seekers are aware of the existence of 'electronic resources in the institutions' libraries.
5. To determine the extent of use of these resources by patrons of the libraries in the selected tertiary institutions of Kaduna State
6. To find out the factors that hinder the use of electronic resources and services in the libraries of the tertiary institutions of Kaduna State

1.6 Scope of the Study

This study covered only the following selected Kaduna State owned tertiary institutions:

- i. Kaduna State College of Education, Gidan Waya
- ii. Kaduna State University, Kaduna
- iii. Shehu Idris College of Health Science and Technology Makarfi
- iv. Nuhu Bamalli Polytechnic, Zaria

The target subjects for the study are the library patrons, (i.e. the students, academic staff and non academic staff) library staff and Librarians of these tertiary institutions.

1.7 Significance of the Study

1. Since the search for printed materials in the library waste time, the study is significant because it will bridge the gap in time of access to information in print materials and those in electronic resources. It will also create awareness for the various managements of the Kaduna State owned tertiary institutions to join the

current technological trend of development by providing electronic resources and services to library patrons.

2. The study will bring to light the availability or non-availability of electronic resources and services in the libraries of higher institutions of the state.
3. It will also bring to light the use or non-use of these resources and services by the intended customers.
4. The study will show the awareness or lack of awareness of the availability of the resources and services.
5. It will reveal the problems encountered in the use of the resources and services to which solutions will be proffered.
6. Recommendations from the study will serve a useful purpose in pointing the way forward in the provision and use of electronic resources in the tertiary institutions in particular and other tertiary institutions in the country in general.
7. It will contribute to the existing knowledge and literature in the area of electronic resources and services.
8. On the basis of the study policies can be formulated on the acquisition of ICTs, staff recruitment and user education.

1.8 Basic Assumptions

The following assumptions were made for this study:

1. Electronic resources will provide information far beyond the limits of the print library resources.
2. The availability and effective exploitation of electronic resources by the students, teachers, and researchers will enhance the teaching and learning process in these institutions.

1.9 Operational Definition of Terms

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

Electronic Resources- These are electronic information resources that users access electronically via a computing network. Examples include online databases, e-journals, e-books, CD-ROMs, audio visual multimedia, etc.

Use of Electronic resources- This is the searching, browsing, examining, visiting of an electronic resource, down loading and printing it by the user.

Electronic service – This is an information activity carried out electronically to satisfy the intended users. Electronic information services include e– mail based services, bulletin board for libraries, online public access catalogue (OPACs), portals and gateways and the internet.

Awareness –This is the knowledge that something exists because an individual or the intended user notices it or realises that it is available or happening.

Tertiary institution – This is a higher educational institution above the secondary school.

Availability- This is ready access to information in the electronic format with little or no stress to the library user.

REFERENCES

- Abel, E. G., Liebcher, P., and Dinman, D. W. (1996), "Factors that Influence Use of Electronic Networks by Science and Engineering Faculty at Small Institutions". Part 1 Queries. *Journal of the American Society for Information Science*, 47(2):146 – 158.
- Akintoye, I. R. (2008) "Optimising output from tertiary educational institutions via adequate funding: A lesson from Nigeria". *International Journal of Finance and Economics*, 14: 359-368.
- A. L. A. (2005) Access to Electronic Information Services and Networks: An Interpretation of the Library Bill of Rights.
- Dahi, M., et al., (2006), Digital Libraries: Integrating Content and System. Great Britain, Clauto Publishing Ltd.
- Eason, K., Richardson, S. and Yu, L. (2000). Patterns of Use of Electronic Journals. *Journal of Documentation* 56(5): 477 – 504.
- Ibrahim ,A. E. (2004) Use and User Perception of Electronic Resources in the United Arab Emirates University (UAEU) *Libri* 54: 18 – 29
- Iljon, A. (1998) Objectives and Strategies: Creating a Platform for the Library in the Information Society. *IFLA Journal* 24(2): 89.
- Kibirge, H. M. and Dapalo, L. (2000) The Internet as a Source of Academic Research Information; Findings of Two Pilot Studies.....
- Mulla, K. R. and Chandrashekara, M. (2005). E-Resources and Services in Engineering College Libraries – A Case Study. *Electronic Journal of Academic and Special Libraries*. 7(1): 1-14.
- Mutula, S. M., Ojedokun, A. A. (2008), In: Information and Knowledge Management in the Digital Age-Concepts, Technologies and African Perspectives by L.O.Aina, S.M.Mutula and M.A.Tiamiyu. Ibadan, Third World Information Services Ltd. Pg 101-121
- Okpareke, C. G. (2007), Nigeria: Role of Tertiary Institutions in National Development. *Daily Champion* 16 May 2007.
- Ray, K. and Day J. (1998) Students Attitude Towards Electronic Information Resources. *Information research* 4(2): 1 – 30.
- Rosenberg, D. (2005) Towards the Digital Library: Findings of an Investigation to Establish the Current Status of University Libraries in Africa. INASP Oxford

- Shim, W. J. et al (2001), Measure and Statistics for Research Library Networked Services: Procedures and Issues (ARL E-Metrics Phase 11 Report). Washington DC: Association of Research Libraries. <http://www.arl.org/stats/newmeas/emetrics/phasetwo.pdf> Accessed 15/7/2008
- Tammaro, A. M. (2006) The Digital Library Users: Case Study on Needs Expectations and Skills.
- Torma, S. and Vakkari, P. (2004) Discipline, Availability of Electronic Resources and the Use of Finish National Electronic Library – Fin Elib. *Information Research* 10(1): 1 – 15.
- Waldman, M. (2003) Freshmans Use of Library Electronic Resources and Self efficacy. *Information Research* 8 (2) 1-39.
- Weingart, S. J. and J. A. Anderson (2000) When Questions are Answered; Using a Survey to Achieve Faculty Awareness of Library’s Electronic Resources. *College and Research Libraries* 127 – 134.
- Weitz L. (2006) Cataloguing Electronic Resources: OCLC-MARC coding Guide-lines. <http://www.oclc.org/bibformat/default.htm>. Accessed 15/7/2008

CHAPTER TWO REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews the literature that relate to the subject of the study. The literature review is broken down into the following sub-topics:

2.1 Introduction

2.2 Historical background

2.3 Reasons for electronic resources and services

2.4 Availability and use of electronic resources and services

2.5 Challenges of electronic resources and services

2.6 Summary of the review

2.2 Historical Background of Electronic Resources

Traditional libraries acquire and make available for use different types of information resources in different formats. Various tools and guides to locate these resources are available for the patrons who physically have to visit the library. Mutshewa (2000) observed that the situation has now changed and access to these guides has become paramount. With the advent of computers and telecommunication technologies, libraries and information centres can provide access to these resources through workstations such as personal computers and terminals that are in patrons' offices as well as in the library buildings.

Ashcroft and Watts (2005) reported that in recent years work for the information profession has become characterized by fast paced change and new skills requirement. This is brought about by the constant emergence of relevant new technologies. Information professionals are increasingly required to adopt their skills and practice in order to gain awareness of technological advances. Nwakanma (2003) noted that

information professionals are now expected to be aware of and capable of using and demonstrating emerging information communication technologies.

Aina, et al (2008) indicated that the foundation stone for electronic resources may have been laid in 1945 when Vannerar Bush envisioned an automated system that would store information including books, personal records and articles. Also, in 1950 Douglas Englebert hypothesized that computers could be used to automate symbol-handling tasks and thus help people think faster better about more complex problems. Similarly, Hawthorne (2008) indicated that the pursuit of electronic resources by libraries was driven by the core values of library science. It is possible to recognize in Ranganathan's five laws of library science, the motivation that drove libraries to incorporate electronic resources into services and collections. Paraphrased to better suit electronic resources, the laws read: resources are for use, every person his or her resource, every resource its user, save the time of the user, and the library is a growing organism (Ranganathan, 1963).

In tracing the origin of electronic resources, Hartley (2003), also observed that electronic information resources started with experimental computer systems developed for the storage and retrieval of bibliographic data during the 1960s. By the end of the decade, some major bibliographic databases were available in magnetic tapes. During the 1970s and 1980s, the availability of machine readable data resulted in the emergence of interactive computing and computer networks which enabled the online information industry to emerge. In the 1980s academic libraries began to transfer from card catalogues to online public access catalogues (OPAC). This enabled end-users to search databases for information. The CD-ROMs emerged at about the same time with OPACs as information delivery vehicles. Both OPACs and CD- ROM enabled the searching of electronic information resources. According to Howe W. (2009) the Internet was the

result of some visionary thinking by people in the early 1960s who saw great potential value in allowing computers to share information on research and development in scientific and military fields. J.C.R. Licklider of MIT, first proposed a global network of computers in 1962, and moved over to the Defense Advanced Research Projects Agency (DARPA) in late 1962 to head the work to develop it. Then came the www, Tim Berners-Lee created the World Wide Web (www) in 1990. The subsequent development of the Mosaic browser in 1992 led to widespread use of the Web beginning in 1993. The graphical interface and the later development of Web search engines made resources on the Internet more accessible to average patrons. The www emerged and made information available in the form of texts, images, sound, etc. The information in the web is structured to facilitate browsing. It provides access to quality controlled electronic information resources such as e-journals, e-books, etc. Each technological development in library electronic resources during the 20th century was intended to make access to resources more direct, convenient, and timely for the user. The implementation of electronic resources made the library a growing organism as libraries adopted processes and reorganized staff repeatedly to accommodate the changes inherent in the use of constantly changing technology.

Borgman (1997) reported that American and British libraries laid the foundation for global models as the first to automate and establish a market for automated library systems. Automation in these countries build on long tradition of shared and distributed cataloguing, resources sharing and cooperation, and ready access to highly developed telecommunications infrastructure.

Okori (2005) reports that in Nigeria significant development and achievements on the use of automated systems have been recorded in academic and research libraries.

Attempts by Nigerian libraries to automate their operations in the early 1970s and 1980s, were unsuccessful. Only some foreign owned or sponsored libraries like the International Institute of Tropical Agriculture (IITA) Library, Ibadan, British Council Library, Ibadan, United States Information Services (USIS) Library and a few others recorded some success stories. Idowu and Mabawonkwu (1999:29). However in a study to establish the current status of digital libraries in African universities, Rosenberg (2005) established that libraries in the African continent only started offering access to CD-ROMs in the 1990s. Given the opportunity presented by the World Bank project in the 1994-95 Bozimo (2006) observed that the National University Commission (NUC) assisted in the automation activities in the Nigerian University libraries. This earlier attempt of automating the libraries failed due to lack of trained manpower and poor funding, In 2004 some university libraries adopted the use of Alice for Windows. Currently, plans are on for some of these libraries to shift to a more sophisticated software called the VTLS (Bozimo 2006:6).

2.3 Advantages of Using Electronic Resources and Services

Information professionals have always sought to understand what factors are relevant in encouraging a person to seek for information. Recently attention is directed to those factors that will help in deciding to use the library and its resources as a place to seek information as compared to surfing the Internet. Borgman (2000) noted that the circumstances of scholarly communication were changing as a result of advances in telecommunication. The advent of computer networks and the worldwide web, the availability of digital libraries and the transition from print to electronic publishing has brought about increased use of electronic resources. Due to the information revolution and the technological changes, Anunobi (2005) observed that unless universities provide

electronic resources, they will fall victims of the World Bank warning that they will be overtaken by developments in the technology era.

Montgomery and King (2002) posited that libraries prefer digital collections for the following reasons:

- i. Digital journals can be linked from and to indexing and abstracting databases,
- ii. Access can be from the user's home, office or dormitory whether or not the physical library is open,
- iii. The library can get usage statistics that are not available for print collections.
- iv. When total processing and space cost are taken into account electronic collections may also result in some over all reduction in library costs.

Armstrong et al (2001), Waldman (2003), and Tenopir (2003) indicated that using electronic resources by students is for the purpose of assignments, background research, project work and revision work. In his study on the use of electronic resources and self-efficacy Waldman (2003), observed that undergraduate students look for the fastest way that will lead to satisfactory results when doing research. This is achieved by going for electronics information sources.

Because of the application of Information Technology (IT), which has resulted in the rise of digital resources Ibrahim, (2004) noted that users United Arab Emirate University are no longer obliged to visit the library at regular opening hours to meet their information needs. They may search the library online catalogue (OPAC), use a subject guide or database to access a citation from the Internet.

Similarly, Tenopir (2003) found out that “before long computers, Internet and electronic computer-based archives and databases will allow academics to conduct much of their researches without setting foot in the library”. He noted that Internet is easier and

more convenient to access from home than the physical library, Another reason for it is that it opens 24 hours a day, seven days a week.

Ray and Day (1998) pointed out that electronic information sources offer today's students different opportunities from their predecessors. These can be seen in Brophy's (1993) advantages for the user which are:

- i. the information needed can be delivered from the most appropriate source to the user;
- ii. the user can re-specify his or her needs dynamically;
- iii. the information is obtained when it is wanted, so becomes "just in time" rather than "just in case"
- iv. the user selects only the information needed to answer the specific question and the information is only stored should the user wishes.
- v. consulting electronic information resources are often faster than consulting print indexes,
- vi. they are convenient, timely and the open up possibility of searching multiple files at a time (Tenopir, 2003 and Liew, et al, 2001).

2.4 Availability of electronic resources and services

Traditionally, libraries were repositories for physical pieces of information and knowledge, and librarians served as mediators between the users and the information in their custody. Rosenberg (2005) pointed out that the demand of emerging models of distance learning, user needs in virtual settings and new technologies have challenged older organizational structures of libraries. Increasingly, information is being created and offered in digital format. This transition has required significant changes in tools and roles of the libraries.

Tammaro (2006), Mulla and Chandrashekara (2006) indicated that in a library the electronic resources collection include – websites, data bases, electronic journals, electronic books, CD-ROMs DVD-ROMs, audiovisuals and multimedia, dissertations and students projects. They listed electronic services to include:

- i. Mail based – offering information sharing services;
- ii. Bulletin boards for libraries - providing a description of internet resources and current awareness services;
- iii. OPAC- a data base describing documents via bibliographic entries composed of fields, some of which maybe queried. It provides access to bibliographic records for the entire collection of books, back volumes videos and films of the library. OPAC can be searched in many ways as shown by accession number, title, author, serial number, subject etc.
- iv. Portals/Gateways- These are subject gateways that are important components of a library website designed for users to help them discover high quality information on the internet in a quick and effective way. They allow easier access to web-based resources in a defined area. They have web pages that contain lists of links to resources.

Mulla and Chandrashekara (2006) observed that the availability of electronic resources depend on the availability of funds as well as the demand for their use. Rosenberg (2005) noted that access of Nigerian university libraries to the EBSCO Host online database was first made possible by NULIB Consult, which is a consortium for the Committee of University Librarians of Nigerian Universities (CULNU). In 2002, the continued subscription of Nigerian University Libraries to EBSCO Host was taken over by the Education Trust Fund (ETF) from 2005-2010. In a study conducted by Liverpool

John Moore University (LJMU) on the provision of electronic information resources in Nigerian libraries, Ashcroft and Watts (2005) examined existing electronic information resources and barriers obstructing effective provision of electronic information. The study observed that electronic resources are better provided through consortia efforts as the main benefits are that of rationalization and cost savings. They observed that a consortium can comprise both large and small institutions and both public and academic libraries through a wide area network (WAN). This observation is in agreement with the position of CULNU, which formed a consortium, NULIB, through which Nigerian university libraries subscribe to electronic resources and services, among many of its other activities. This is instructive for the libraries of higher institutions owned by the Kaduna State Government.

2.5 Use of electronic resources

An important factor that influences the use of electronic resources when they are provided is the user's awareness of their availability in the library. But how does the library make patrons aware of resources that occupy no traditional shelf space and how does it determine what kind of patron support are needed in the new electronic realm? In view of this Weingart and Anderson (2000) reported that since electronic resources occupy no traditional shelf space, the best way to create awareness for their availability in libraries is for libraries to inform users of each new resource as it is acquired, provide training opportunities for library users and the mechanics of remote access to resources.

Ray and Day (1998) and Borgman (1996) noted that the use of online electronic resources and retrieval systems require a basic knowledge of computing and searching skills. This is because library databases use web based technologies that may not be very different from the general web based resources. Whitmire (2001) observed that the use of

electronic resources is also influenced by students' use of the library. The more a student uses the library the more familiar he becomes with its resources including its electronic resources.

Kidd (2000), Voorbij (1999) and Tenopir (2003) reported that electronic resources reveal differences in use, the most heavy users being from the areas of science and technology because they adopted the use of electronic journals and other digital library resources. On his part, Ibrahim (2004) observed that business schools in the United Arab Emirate were also early adopters of electronic resources use. However, it is recorded that members of the arts and humanities are the least adopters of electronic resources use. Chris et al (2001) reported that resources used most by students are the OPAC to find books and other holdings of the library. This is so because it is the one most students are introduced to or exposed to during inductions to create awareness.

Similarly Ehikhamenor (2003) posited that facilities that attracted the greatest amount of patronage were e-mails, catalogues and databases, e-journals, www resources and software. However Pullinger (1999) observed that the extent to which the use of e-journals becomes part of normal research practice depends not only on the discipline concerned but also on the role and status of the researcher, the resources and on the specific information needs.

The effective use of electronic resources requires necessary relevant computing skills. In a study of faculty's use of electronic resources, Waldman (2003) found out that use was influenced by factors such as computing skills of academics, their age, and gender. Majid (1999) found a significant relationship between computing skills and use of electronic resources in the library including online public access catalogues (OPAC).

Ray and Day (1998) reported that the most popular method for acquiring the necessary skills to use electronic resources is via individual trial and error, colleagues or peers and guidance from library staff. Steinmuella (2001) attested to this position when he suggested that many information and communication technology (ICT) users are self taught and are capable of developing an understanding of ICTs through utilizing them. Bruce (1998) also asserted that the knowledge required to search the internet was not acquired by attending a formal training course or courses but rather through self instruction with significant assistance from friends and colleagues.

2.6 Challenges in the Use of Electronic Resources and Services

As Iljon (1998) observed the convergence of computing and communication technologies impact significantly on the way in which information resources are created, managed and used. Libraries are implementing these systems to take advantage of these developments. Ehikhamenor (2003) noted that at the core of this transformation are computer based networks, particularly the Internet which resulted in the creation of various services including online bibliographic and full text databases, worldwide web (www) resources and electronic journals.

Although the introduction of these electronic resources and services is a welcome development to the information professionals, their use by the library patrons poses some challenges and concerns. Ray and Day (1998) and Borgman (1996) posited that, in order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. Dutton 1990 suggests that the skills required to maximize the potentials of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the database and the instructions which must be inputted into the computer by the searcher as

well as an understanding of the ways in which instructions are linked with one another. Ray and Day (1998) further averred that the ability to find and retrieve information effectively is a transferable skill useful for future life as well as enabling the positive and successful use of electronic resources while at university.

In a study conducted by Agaba, et al (2007), they discovered that inadequacy of facilities is another problems faced by users of electronic resources, thereby leading to congestion in libraries. Ibrahim (2004) reported that among factors that might inhibit use of electronic resources is the irrelevance of search results from databases. Likewise are the quality and authentication of the content of electronic resources and the usability of the library websites. Ashcroft and Watts (2005) declared that, there is also a poor computer communication system which may be interpreted as poor bandwidth consequently leading to poor utilization of these resources.

Similarly, Tenopir (2003) posited that although the advantages outweigh the perceived problems or concerns as use increases and more resources are available, users still express the discomfort of reading from the screen or poor graphic quality. This is supported by Palmer and Sandler (2003) who noted that Users of electronic resources will prefer reading from paper printouts.

According to Torma and Vikkari (2004), Tenopir (2003) and Waldman (2003) demographics yield clues as to what factors contribute to the use of electronic resources. In this, they observed that discipline, status, age, gender are variables that correlate with the comfort of computers and use of electronic resources. Watts and Ibegbulam (2005) in a study of Nigerian libraries by Ashcroft and Watts (2005) noted that high cost of hardware, software, and particularly internet service providers were significant barriers to the provision of electronic resources.

The digital divide describes a division between those people who do or do not have access to information and communication technologies. Noris (2001) posited that there exists a global, social and democratic digital divide. The global divide is the difference in access between citizens while the democratic divide is between those who are or are not able to use information communication technologies to participate in public life.

2.5 Summary of the review

From the above review of literature it was gathered that the history of electronic resources dates back to the 1960s when experimental computer systems were developed for the storage and retrieval of bibliographic data, in the 1970s and 1980s machine readable data emerged and academic libraries could transfer information in card catalogues to OPAC and CD-ROMs. The www emerged in the 1990s and made resources on the Internet more accessible to the average patron.

The emergence of electronic resources offered different opportunities and advantages from their predecessors such as –convenience, timeliness, and opened up possibilities of searching multiple files at a time and the information needed can be delivered from the most appropriate source to the user.

Despite their many advantages, it was gathered that their availability depended on the availability of funds therefore, they are better provided through consortia efforts. When they are provided, their use is influenced by the awareness of their availability in the libraries and a basic knowledge of computing and searching skills.

In an attempt to provide electronic resources and services the efforts meet with challenges such as high cost of software and hardware, lack of necessary skills with which to exploit the electronic resources and services, and the irrelevance of search

results from databases. These problems must be addressed in order to enhance patrons' search and retrieval of information through such technologies.

REFERENCES

- Agaba, D. M. et al (2007) Utilization of Electronic Information Resources by Academic Staff at Makerere University
- Aina, L. O., Mutula, S. M., Tiamiyu M. A.(2008), Information and Knowledge Management in the Digital Age- Concepts, Technologies and African perspectives.Ibadan, Third World Information Services Ltd. Pg 101-121.
- Armstrong C., and Lonsdale R., (2006)E-Resources Management Handbook. A general overview of the E-Resources industry
<http://www.uksg.org/sereals/handbook.asp> html. 10/8/2009.
- Anunobi, V. C. (2005) ICT Availability and Use in Nigerian University Libraries. *Global Review of Library and Information Science* 1 (1): 19-29
- Ashcroft, L. and Watts, C. (2005) ICT skills for information professionals in Developing countries: Perspectives from a study of the Electronic Information Environment in Nigeria. World Library and Information Congress, 70th IFLA General conference and council Buenos Aires Argentina. Available at <http://www.ifla.org/iv/ifla70/prog04.htm> 10/8/2009
- Borgman C. (1997) From Acting Locally to thinking globally: A brief history of Library Automation. *Library quarterly* 67(3): 13
- Borgman, C. L. (2000) Digital Libraries and the Continuum of scholarly Communication. *Journal of Documentation* 56 (4): 412 – 430
- Borgman, C. L. et al (1996) Rethinking Online Monitoring Methods for Information Retrieval Systems: From Search Product to Search Process. *Journal of the American society for Information Science*. 47(7):568 – 583.
- Bozimo D.O.(2006) ICTs and the Ahmadu Bello University Libraries. *Nigerian Libraries* 39 (2005/2006):1-6.
- Brophy, P. (1993) Networking in British Academic Libraries. *British Journal of Academic Librarianship* 8 (1) 49-60.
- Bruce, H. (1998) User Satisfaction with Information Seeking on the Internet. *Journal for the American Society for Information Science* 49(6): 541 – 556.
- Cherry, J. M. and Duff, W. M. (2002) Study of Digital Library Users over Time: A Follow-up Survey of Early Canadian Online. *Information Research* 7(2) Available at <http://www.information.net/ir/7-2/paper123.html>. 10/8/2009
- Chris, A. et al (2001) A study of the Use of Electronic Information Systems by Higher Education Students in the UK *Program* vol. 5 (3): 241-262.
- Dutton G. B. (1990) An Introduction to End User Searching. In Bysouth P.

- T (ed.) End-user Searching, the Effective Gateway to Published Information
London: *ASLIB* 1-18.
- Ehikhamenor, F. A. (2003) Internet Facilities: Use and Non-Use by Nigerian University scientists. *Journal of Information Science* 29(1): 35-48.
- Hartley, R. J. (2003) Electronic Information Resources. In: International Encyclopaedia of Information and Library science. Edited by John Father and Paul Sturges USA Routledge.
-]Hawthorne, D. (2008) History of Electronic Resources.
<http://www.igi-pub.com>. 10/8/2009.
- Howe W., (2009) A Brief History of the Internet.
<http://www.walthowe.com/navnet/history.html> 10/08/2009.
- Ibrahim A. E. (2004) Use and User perception of Electronic Resources in the United Arab Emirate University (UAEU) *Libri* 54 :18 – 29.
- Idowu, A. O. and Mabawonkwu (1999) Information Technology Facilities and Applications in Some Nigerian Research and University Libraries. *African Journal of Library Architecture and Information Science* 9(10): 27 – 35.
- Iljon, A. (1998) Objectives and Strategies: Creating a platform for the library in the information society. *IFLA Journal* 24(2): 89.
- Kidd, T. (2002) Electronic Journal Usage Statistics in Practice. *Serials* 15(1) 11, 17.
- Liew C. L., Foo S. and K. R. Chennupati (2001) Towards a New Generation of Information Environment for the use of E-documents. *Journal of Information Science* 27(5): 327-342.
- Majid, S. and Abazova, A.F. (1999) “Computer Literacy and Use of Electronic Information Sources by Academics: A Case Study of International Islamic University of Malaysia” *Asian Libraries* 8 (4) 100-111
- Montgomery, C. H. and D. W. King (2002) Comparing Library and User Related Costs of Print and Electronic Journal Collections. A First Step Towards a Comprehensive Analysis. *D-Lib* 8 (10) Available at <http://www.dlib.org/dlib/October02/montgenery/10montgenery.html>
- Mulla, K. R. Chandrashekara, M. (2006) E-Resources and Services in Engineering College Libraries – A case study. *Electronic journal of academic and special librarianship* 7 (1): 1 – 14.
- Mutshewa, A. K. N. Rao (2000) Enhancing Access through E-resources: The university of Botswana experience. *Library hitech* 18 (4): 315-320.

- Norris P. (2001) *Digital Divide: Civic Engagement Information Poverty and the Internet Worldwide*. Cambridge University Press Cambridge England.
- Nwakanma C. D. (2003) Information Technology Competences: Identifying Knowledge Depths for Library and Information Science Education. *Canadian journal of information and library science* 27(4): 75 – 76.
- Okori, A. M. (2005) The Challenges of Information Communication Technologies (ICTs) for Nigerian Academic Libraries. *Global Review of Library and Information Science*. 1(1) 84 – 93
- Palmer J. P and Mark Sander (2003) What do Faculty Want? *Net Connect (winter)* 26 – 28
- Pullinger D. (1999) Academics and the New Information Environment: The Impact of Local Factors on the Use of Electronic Journals. *Journal of Information Science* 25(2): 164-172
- Ranganathan, S.R. (1963). *The Five Laws of Library Science*. Bombay, India: Asia Publishing House.
- Ray, K. and Day J. (1998) Students Attitude Towards Electronic Information Resources. *Information research* 4(2): 1 – 30.
- Rosenberg D. (2005) *Towards the Digital Library: Findings of an Investigation to Establish the Current Status of University Libraries in Africa. International Network for the Availability of Scientific Publications (INASP)* Oxford.
- Steinmuella W. F. (2001) ICTs and the Possibility for Leapfrogging by Developing Countries. *International Labour Review* 140 (2) 193 – 210.
- Tammaro, A. M. (2006) *The Digital Library Users: Case Study on Needs Expectations and Skills*.
- Tenopir, C. (2003) *Use and Users of Electronic Library Resources: An Overview and Analysis of Recent Research Studies* Council on Literary and Information Resources. Washington D. C. available at <http://www.uir.org/puls/reports/pubs120/contenthtml> 15/7/2008
- Torma, S. and Vakkari, P. (2004) Discipline, Availability of Electronic Resources and the Use of Finish National Electronic Library – Fin Elib. *Information Research* 10(1): 1 – 15.
- Valentine, B. (1993) Undergraduate Research Behaviour: Using Focus Groups to Generate Theory. *Journal of academic librarianship* 19(5): 300 – 304.

- Voorbij, H. J. (1999) Searching Scientific Information on the Internet: A Dutch academic User Survey. *Journal of the American Society for Information Science* 50(7): 598 – 615.
- Waldman, M. (2003) Freshmans Use of Library Electronic Resources and Self efficacy. *Information Research* 8 (2) 1-39.
- Watts C., Ibegbulam I. (2005) Access to Electronic Health care Information Resources in Developing Countries: Experiences From the Medical Library, College of Medicine, University of Nigeria. World Library and Information Congress 71 IFLA General Conference and Council.
- Weingart, S. J. and J. A. Anderson (2000) When Questions are Answered; Using a Survey to Achieve Faculty Awareness of Library's Electronic Resources. *College and Research Libraries* 127 – 134.
- Whitmire, E. (2001) The Relationship Between Undergraduates Background Characteristics and College Experiences and their Academic Library Use. *College and Research Libraries* 62(6) 528-540

CHAPTER THREE METHODOLOGY

3.1 Introduction

This chapter contains the research design, population of the study, sample and sampling procedure, research instruments, procedure for gathering data, data analysis and conclusion.

3.2 Research Design

The survey method was used to conduct this study. This is because, as Osuala (2005) puts it, a survey research studies both large and small populations, and by selecting and studying samples chosen from the population, it helps to discover the relative incidence, distribution and interrelations of variables.

3.3 Population of the Study

The population of this study consisted of the libraries of the tertiary institution of Kaduna State. These included students, academic and none academic staff, and library staff of these institutions. The institutions and users of the institutions' libraries are as shown in Table 3.1 below.

Table 3.1: POPULATION OF THE STUDY

Institution	No of Students	%	No of Academic Staff	%	No of Non Academic Staff	%	Total
Kaduna State University Kaduna	1679	73.0	375	16.3	246	11.4	2300
Kaduna State College of Education Gidan Waya	1878	72.1	397	15.2	329	12.6	2604
Shehu Idris College of Health Science and Technology Makarfi	1500	82.0	50	2.0	265	14.0	1815
Nuhu Bamali Polytechnic Zaria	5720	87.0	431	6.0	365	5.0	6516
Total	10777	81.42	1253	9.45	1205	9.0	13235

Source: Students and Staff Registers in Libraries of various institutions-2009.

3.4 Sample and Sampling Procedure

The fact that the population of this study is very large, the use of sample becomes very necessary. This is because, as Ekeh (2003) puts it, it is impossible for a researcher to use as subject every member of a large population for reasons of limitations in financial resources, time, efforts and scope. Gay (1980) cited in Jen (2000) reported that if the population is large, say in thousands the percentage of population to sample should be a minimum of 10%. For these reasons the researcher used 10% in every category of the library users. This implies the use of proportionate stratified random sampling procedure to draw the sample for the population. Thus from the population ten percent of every stratum of users will be – students, 1077 academic staff, 125; Non academic staff 120. This brings the total sample size to 1322.

Table 3.1B Samples for population

Students	Academic staff	Non academic staff	Total
1077	125	120	1322

3.5 Research Instruments

The instruments used for this study were questionnaires, interviews and personal observations. The questionnaire was designed by the researcher and validated by the researcher's supervisor.

3.5.1 Questionnaire

The questionnaire was aimed at drawing information relating to the presence of electronic resources and services, users' awareness and use of them and factors that tended to inhibit the use of electronic resources in these institutions. A twenty four item

questionnaire was constructed to draw information from users on the availability, awareness and use of electronic resources and services. The questions were both open and close-ended. The close ended questions provided options itemized to help respondents provide relevant answers. The open ended questions gave respondents the opportunity to express their opinions and feelings freely.

3.5.2 Interviews

A twenty-item oral questions were designed by the researcher to draw information from the heads of the libraries to get information in areas where respondents could not respond clearly to questions and to obtain reliable and valid information in the form of verbal responses from respondents in areas that were not covered by the questionnaire. Saliu and Oyebanji (2004) noted that the interview technique with the aid of the questionnaire is a kind of conversation carried out between the interviewer and the respondents with the objective of gathering desired data.

3.5.3 Observation

The researcher also used observation as a tool to gather information; and examined and assessed the presence or absence of the electronic resources and other prevailing conditions in the selected institutions. Ekeh (2003) reported that to observe means to watch carefully for the occurrence of variables, measure and record for the purpose of relating it to other variables.

3.6 Procedure for Data Gathering

The researcher proceeded to the various libraries and with the aid of research assistants administered the instruments –distributed the questionnaires, conducted the interviews and retrieved the questionnaires.

3.7 Data Analysis

The researcher used the descriptive statistical tools to analyze the data collected. The data gathered were analyzed using tables, frequencies, percentages, mean, standard deviation to present data. Also the t-test and the Pearson Product Moment Correlation (PPMC) were used to test the hypothesis for better understanding and interpretation of the findings. The analysis provided answers to the research questions.

REFERENCES

- Ekeh, F. I. (2003). Research Methodology and Statistics in Education. Nsukka: Madol Press. pp72-88
- Jen, S. U. (2002). Fundamentals of Research Methodology. Yola: Paraclete publishers. pp75-81
- Osuala, E. C. (2005). Introduction to Research Methodology. Nimo: Rex Charles and Patrick. pp253-267
- Saliu, H. A. (2004). A Guide on Research Proposal and Reporting. Ilorin: University of Ilorin. pp95-101

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with the analysis of data collected through the use of questionnaire administered and the interviews conducted. It also discusses the findings on the availability awareness and use of electronic resources and services in the tertiary institutions of Kaduna State. The data gathered were analysed using tables, frequencies and percentages. The t-test and Pearson Product Moment Correlation (PPMC) statistical tools were used to test the four hypotheses for better understanding and interpretation of findings. The chapter is further organised according to the research questions and the hypothesis of the study.

4.1.2: Response Rate

One thousand three hundred and twenty two (1322) copies of the questionnaire were distributed to students, academic staff, and non academic staff of the selected institutions. Out of these, nine hundred and fifty (950) were returned on completion, which represents 71.86%. This high response rate was achieved as a result of the cooperation and assistance received from the research assistants in the various institutions studied. The response rate from the various institutions is shown in Table 4.1 below.

Table 4.1: Response Rate.

Institutions	Questionnaire Administered	Questionnaire Returned	Percentage %	Cumulative %
KASU, Kaduna	230	200	21.0	21.0
KSCOE, Gidan waya	260	259	27.3	48.3
NBP, Zaria	651	363	38.2	86.5
SICHST, Makarfi	181	128	13.5	100
TOTAL	1322	950	100	

The data in Table.4.1 above reveals that, Kaduna State University (KASU), had 200 respondents constituting 21%; Kaduna State College of Education (KSCOE), Gidan Waya 259(27.3%); Nuhu Bamali Polytechnic (NBP), Zaria 363 (38.2%); while Shehu Idris College of Health Science and Technology (SICHST), Makarfi had 128 (13.5%). Most respondents were males constituting 62.4% while 35.9% were females. 1.7% of the respondents did not indicate their gender.

4.1.3: Status of Respondents

Table 4.2 below describes respondents based on their status.

Table 4.2: Status of Respondents.

Respondents	Frequency	Percentage %	Cumulative %
Students	743	78.2	78.2
Academic Staff	126	13.3	91.5
Non Academic Staff	57	6.0	99.5
No Response	24	2.5	100
Total	950	100	

Table 4.2 above reveals that, 743 (78.2%) of the respondents were students; 126 (13.3%) academic staff; and 57 (6.0%) were non academic staff from the various institutions. 24 (2.5%) did not indicate their status.

4.2 Data Analysis and Discussion of Findings.

Based on the responses received from the questionnaire data was analyzed as can be seen in the following subsections.

4.2.1 Institutions with Collections of Electronic Resources in their Libraries.

Table 4.3 below shows a list of e-resources found in the tertiary institutions of Kaduna State.

TABLE4.3: Availability of Electronic Resources.

INSTITUTION	E-RESOURCES															
	Computer		VCD		DVD		CD-ROM		Flash Drive		VCD/DVD Player		Internet		Electronic Books, Journals	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU, Kaduna	101	50.5	73	31.7	73	31.7	35	17.5	20	35.0	73	36.0	45	22.5	20	10.0
KSCOE, Gidan waya	117	45.2	64	24.7	89	34.0	25	9.7	58	22.4	77	29.7	25	9.7	16	6.2
NBP, Zaria	151	41.6	131	36.1	142	39.1	45	12.4	81	22.3	112	30.9	56	15.4	32	8.8
SICHST, Makarfi	62	34.25	34	26.6	39	30.5	13	10.2	19	14.8	27	21.1	19	14.8	7	5.5
TOTAL	431	45.3	302	31.78	345	36.3	1.18	12.42	228	2.0	289	30.42	145	15.26	75	7.89

Table 4.3 Shows the electronic resources found in each institution. The result revealed that the computer had the highest frequency 431 (45.3%), followed by DVD 345 (36.3%), VCD 302 (31.78%) and the VCD/ DVD player 289 (30.42%). The electronic resources that had the lowest frequencies were the Internet 145(15.26%) and e-books and e-journals 75(7.89%). The implication of this result is that the computer is being used by different people for different purposes such as administration and processing of information, assignments, research, project work and revision work.

From the individual institutions, the results revealed that the computer still had the highest frequency, 101(50.5%) in KASU; 62(34.25%) in SICHST Makarfi; 117(45.2%) in KSCOE and the least frequency 151(41.6%) in NBP Zaria. The results also revealed that the DVD had the next high frequency with NBP having 142(39.1%); KASU 73(31.7%); KSCOE 89(34.0%). The least available e-resource was the e-books and e-journals where KASU had 20(10%), NBP 32(8.8%), KSCOE 16(6.2%) while SICHST had 7(5.5%), the implication of this result is that because most information that is audio, visuals, graphics and animations in nature are accessible through the aid of VCD and DVDs (Armstrong and Lonsdale 2006)

From the above it can be deduced that electronic information resources provision was at a low level in the tertiary institutions libraries. This is true because responses from

interviews with the librarians in Table 4.3B below, libraries have to wait for the ETF that had always been the main provider of funds for the libraries. This situation confirms the position held by Ashcroft and Watts (2005). The position in the Kaduna State tertiary institutions' libraries was as it was because of poor funding. Findings indicated that funding for electronic resources in these libraries came from the ETF, with the State government giving little or nothing. This implies that government will have to improve funding for electronic resources to be able to increase their quantity in the institutions.

Table 4.3B Funding for Electronic Resources

Years	Institutions			
	KASU	KSCOE	NBP	SICHST
2005	ETF	-	-	-
2006	-	-	-	-
2007	-	-	-	ETF
2008	-	-	-	-
2009	-	-	-	-

4.2.2 Access to Computers

The researcher wanted to find out where respondents access the computer. Table 4.4 shows access of the computer.

Table4.4: Access to computer

Institutions	Variable											
	Home		School		At work		From Friend		Others		No Response	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	68	34.0	69	34.5	24	12.0	19	9.5	12	6.0	8	4.0
KSCOE	80	30.9	70	27.0	18	6.9	36	13.9	17	6.6	38	14.7
NBP	69	19.0	136	37.5	27	7.4	27	7.4	66	18.2	38	10.5
SICHST	30	23.4	68	53.1	12	9.4	5	3.7	1	0.8	12	9.7
Total	247	26.0	343	36.1	81	8.5	87	9.1	96	10.1	96	10.1

KEY: KASU, Kaduna State University; KSCOE, Kaduna State College of Education; NBP, Nuhu Bamali Polytechnic; SICHST, Shehu Idris College of Health Science and Technology.

In response to the question as to where they accessed computer, Table 4.4 showed that 343 (36.1%) indicated it was in the school, 247(26.0%) accessed it in their homes, 87 (9.1%) accessed it from friends. While 81(8.5%) accessed it in their places of work. 182 (20.2%) accessed it from various other sources. Most respondents accessed and used the computer because it is the resource that patrons use to process, store and retrieve information, it is also used by researchers and teachers in the teaching and learning process.

4.2.3 Access to Internet

Table 4.5 below shows result of respondents as to where they accessed the Internet.

Table4.5: Access to Internet

Institutions	Variable											
	Home		School		At work		Cyber Cafe		Others		No Response	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	32	16.0	55	27.5	17	8.5	78	39.0	3	1.5	15	7.5
KSCOE	23	8.9	37	14.3	12	4.6	123	47.5	10	3.7	54	20.8
NBP	31	8.5	121	33.3	29	8.0	117	32.2	13	3.5	52	14.3
SICHST	10	7.8	53	41.4	4	3.1	45	35.2	4	3.1	12	9.4
TOTAL	96	10.1	266	28.0	62	6.5	363	38.2	30	30.1	133	14.0

KEY: KASU, Kaduna State University; KSCOE, Kaduna State College of Education; NBP, Nuhu Bamali Polytechnic; SICHST, Shehu Idris College of Health Science and Technology.

Respondents were asked where they accessed Internet. Results in Table 4.5 showed that 363 (38.2%) respondents indicated cyber cafes, 266 (28.0%) school, 96 (10.1%) indicated accessed the Internet from their homes using their cell phones and modems. 62 (6.5%) accessed Internet from their work places. While 163 (17.1%) did not indicate having access to the Internet. From the results it can be seen that most respondents accessed the computer and Internet at school, which is a confirmation of the availability of these resources in the institutions.

4.2.4: Types of Electronic Resources Available in the Libraries.

The researcher wanted to find out the types of electronic resources that were available in the libraries of the tertiary institutions in Kaduna State. The table below describes the list of electronic resources found in these libraries.

TABLE 4.6 Types of Electronic Resources available

ELECTRONIC RESOURCES	INSTITUTIONS LIBRARIES									
	KASU		KSCOE		NBP		SICHST		TOTAL	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Full text Articles	29	14.5	22	8.5	46	12.7	11	8.6	108	11.4
Library Websites	70	35.0	49	18.9	97	26.7	25	19.5	240	25.4
Online Databases	59	29.5	34	13.1	75	20.7	19	14.8	187	19.7
Electronic Books	52	26.0	39	15.1	77	21.2	13	10.2	181	19.1
Electronic Journals	43	21.5	22	8.5	63	17.4	8	6.3	136	14.3
CD-ROMs	64	32.0	42	16.2	95	26.2	23	18.0	224	23.6
Internet Websites	120	60.0	113	43.6	171	47.1	45	35.2	449	47.3
Multimedia	64	32.0	53	20.6	97	26.7	24	18.8	238	25.1
VCD, DVD	109	54.4	107	41.3	205	56.5	66	51.6	487	51.3
FAX	45	22.5	23	8.9	60	16.3	7	5.5	135	14.2
Flash Drives	103	51.5	76	29.3	126	34.7	26	20.3	331	34.8
Computers	111	55.5	108	41.7	175	48.2	56	43.8	450	47.4

KEY: KASU, Kaduna State University; KSCOE, Kaduna State College of Education; NBP, Nuhu Bamali Polytechnic; SICHST, Shehu Idris College of Health Science and Technology.

Table 4.6 identifies the types of electronic resources provided in the selected institutions' libraries. Results revealed that in KASU the following resources scored high, flash drives 103(51.5%); VCD DVD 109(54.4%); Internet websites 120(60.0%); computers 111(55.5%); E-resources such as Library websites, multimedia, online data Bases, full text articles, CD-Roms, fax, E-journals and -books had frequencies of 70 (35.0%); 64 (32.0%); 59 (29.5%); 29 (14.5%); 64 (32.5%); 45(22.5%); 43(21.5%); 52(26%) scores respectively. In the KSCOE the following resources scored high, 108 (41.7%) for computers; 107 (41.3%); VCD DVDs 113(43.6%); Internet websites and 76 (29.3%) for flash drives. Full text articles, library websites, online Data bases, e-books, e-journals, CD-Roms, multimedia, and fax scored low, 22(8.5%); 49(18.9%); 34 (13.1%); 39 (15.1%); 22 (8.5%); 42 (16.2%); 53 (20.6%); and 23 (8.9%) respectively. This result

indicates that e-resources scored low in this school. In NBP responses showed e-resources with high scores of 171 (47.1%) for Internet websites, 205 (56.5%) VCD /DVDs; 126 (34.9%) flash drives and 175 (48.2%) for computers. E-resources that scored low include full text articles, library websites, online Data bases, e-books, e-journals, CD-ROMs, multimedia and fax with scores of 46 (12.7%); 97 (26.7%); 75 (20.7%); 77(21.2%); 63 (17.4%); 95 (26.2%);97 (26.7%); and 60 (16.3%) respectively. In SICHST responses showed e-resources with scores of 45 (35.2%) for Internet websites, 66(51.6%), VCD DVDs; and 56 (43.8%) for computers. Full text articles, library websites, online Data bases, e-books, e-journals, CD-ROMs multimedia, fax and flash drives scored very low 11 (8.6%); 25 (19.5%); 19 (14.8%); 13 (10.2%); 8 (6.3%); 23 (18.0%); 24(18.8%); 7 (5.5%); and 26 (20.3%) respectively. Generally results in the table above showed that the computer, flash drives, VCD DVDs and Internet websites scored high with 450 (47.4%); 331(34.8%); 487 (51.3%) and 449(47.3%) respectively, this is because these resources are most widely used for processing, storage and retrieval of information.

4.2.5: Types of Electronic Resources Respondents Use

The researcher wanted to find out the types of electronic resources that respondents used in their institutions. Table 4.7 below describes the Electronic resources used by respondents in the tertiary institutions in Kaduna State.

TABLE 4.7: Types of Electronic Resources Used

E-RESOURCES	INSTITUTIONS LIBRARIES									
	KASU		KSCOE		NBP		SICHST		TOTAL	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Fulltext Article	29	14.5	20	7.7	56	15.4	4	3.1	109	11.47
Library Website	64	32.0	40	15.4	111	30.6	10	7.8	225	23.68
Online Databases	47	23.5	19	7.3	86	23.7	8	6.3	160	16.84
Electronic Books	42	21.0	28	10.8	82	22.6	11	8.6	163	17.15
Electronic Journal	29	14.5	16	6.2	50	13.8	6	4.7	101	10.63
CD-Roms	49	24.5	35	13.5	63	17.4	12	9.4	159	16.73
Internet Website	107	53.5	98	37.8	125	34.4	43	33.6	373	39.26
Multimedia	55	27.5	47	18.1	69	19.0	19	14.8	190	20.0
VCD, DVD	84	42.0	98	37.8	163	44.9	61	47.7	406	42.73
FAX	25	12.5	4	1.5	35	9.6	6	4.7	70	7.3
Flash Drive	90	45	61	23.6	102	28.1	24	18.8	277	29.15
Computer	111	55.5	108	41.7	175	48.2	56	43.8	450	47.36
TOTAL	732		574		1117		260		2683	

KEY: KASU, Kaduna State University; KSCOE, Kaduna State College of Education; NBP, Nuhu Bamali Polytechnic; SICHST, Shehu Idris College of Health Science and Technology.

Respondents were asked to indicate the electronic resources they used most. The results revealed that computer had a score of 450 (47.4%), Internet 373 (39.3%), Flash drive 277 (29.2%) and library website 225 (23.7%) as the most used. This result reveals average usage of the electronic resources. Full text article, online databases, E-books, E-journals, CD ROMS had below average usage of 109 (11.47%); 160 (16.84%); 163(17.15%); 101(10.63%) and 159 (16.73%) scores respectively. Fax had the least frequency of 70 (7.3%). This low usage might be as a result of lack of awareness about electronic resources provided by libraries due to ineffective methods of communication. It also implies that only electronic resources that respondents were familiar with were preferably used. This finding corroborates Sharma's (2009) discovery on use and impact of electronic resources at Guru Gobind Sing Indraprastha University (GGSIPU) in India.

4.2.6 Types of Electronic Services Provided by the Libraries

Table 4.8 below is a list of electronic services presented for respondents in the tertiary institutions of Kaduna State to identify the ones they were familiar with.

TABLE 4.8: Types of Electronic Services Provided

INSTITUTIONS	ELECTRONIC SERVICES											
	OPAC		PORTAL /GATEWAY		ONLINE REFERENCE		E-MAIL		BULLETIN BOARDS		ELECTRONIC ALARTS	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	16	8.0	24	12.0	61	30.5	146	73.0	32	16	48	29.0
KSCOE	10	3.9	19	7.3	34	13.1	166	64.1	23	8.9	45	12.4
NBP	23	6.3	39	10.7	98	27.0	231	63.6	79	21.8	93	25.6
SICHST	10	7.8	10	7.8	31	24.2	63	49.0	18	14.1	11	8.6
TOTAL	59	6.21	92	9.68	224	23.57	606	63.78	152	16	202	21.78

Table 4.8 the respondents indicated the type of electronic services they were familiar with. Results revealed that knowledge of electronic services available in the selected libraries was below the expected level for most of the services provided. It was observed that the email, online reference and electronic alerts were the most known with frequencies of 606 (63.8%), 224 (23.6%), 202 (21.8%) respectively. The OPAC had the lowest frequency of 59 (6.2%) responses. This response rate showed that most respondents were not familiar with the electronic services provided in the selected institutions' libraries. Worthy of note is the fact that in all the institutions the E-mail enjoys a greater patronage over other services. This situation is so because the E-mail is used frequently by patrons to communicate with friends and relations around and in the Diaspora.

4.2.7: Types of Electronic Services Used

The respondents were presented with a list of electronic services, from which to indicate the ones they used most.

TABLE 4.9: Types of Electronic Services

INSTITUTIONS	ELECTRONIC SERVICES											
	OPAC		PORTAL GATEWAY		ONLINE REFERENCE		E-MAIL		BULLETIN BOARDS		E-ALERTS	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	14	7.0	12	6.0	33	16.5	115	57.5	4	2.0	4	2.0
KSCOE	12	4.6	12	4.6	30	11.6	124	47.9	10	3.9	11	4.2
NBP	18	5.0	17	4.7	44	12.1	168	46.3	24	6.6	21	5.8
SICHST	7	5.5	4	3.1	15	11.7	52	40.6	11	8.6	6	4.7
TOTAL	51	5.4	45	4.7	122	12.8	459	48.3	49	5.1	42	4.4

Results in Table 4.9 above indicated that E-mails and online reference had 459 (48.3%) and 122 (12.8%) frequencies respectively, the OPAC, portal gateway, bulletin boards and electronic alerts scored low 51(5.4%); 45 (4.7%); 49 (5.1%); 42 (4.4%). The result showed the frequencies of respondents on a particular electronic service as an indication of what they know and can use. The implication is that users will give preference these new services and tend to over rely on them than those that are gotten from the physical library.

4.2.8: Reasons for Use of Electronic Resources

The researcher wanted to find out the reasons given by respondents for using electronic resources by respondents. Table 4.10 below gives some reasons for using electronic resources and respondents were expected to indicate what influenced their use of electronic resources.

TABLE 4.10 Reasons for Using Electronic Resources

INSTITUTIONS	REASONS FOR USING ELECTRONIC RESOURCES													
	STUDY		RESEARCH		SOCIALISE		CHAT		TO CHECKOUT/ SEND MAILS		OTHERS		NO RESPONSE	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	82	41	64	32	23	11.5	10	5.0	9	4.5	1	.5	11	5.5
KSCOE	87	33.6	70	27	20	7.7	4	1.5	9	3.5	2	.8	67	25.9
NBP	86	23.7	151	41.6	34	9.4	10	2.8	11	3.0	3	.8	68	18.7
SICHST	41	32	52	40.6	5	3.9	0	0.0	2	1.6	1	.8	27	21.1
TOTAL	296	31.15	337	35.47	82	8.63	24	2.52	31	3.2	7	.73	173	18.21

Table 4.10 gives reasons for using electronic resources and the results revealed that most respondents 337 (35.47%) used them for seeking information for research, 296 (31.6%) indicated using e-resources to study. The least reason given for the use of electronic resources were to chat and to check or send mails with frequencies of 24 (2.52%) and 31 (3.2%) respectively. The review of related literature confirms this finding because Armstrong et al (2001), Waldman (2003) and Tenopir (2003) indicated that students used e-resources for the purpose of assignments, research, project work and revision work. The effect of this discovery is that users will tend to over rely on electronic resources. This can be seen in the Google mentality in information seeking by users while print materials, though perhaps more relevant for a topic are ignored.

4.2.9: Methods of Creating Awareness for the Available E-Resources and Services

Below is a list of the various methods used for creating awareness the availability of electronic resources and services in the libraries of the institutions

Table 4. 11: Awareness of Electronic Resources and Services

INSTITUTIONS	METHODS OF CREATING AWARENESS											
	Reference Desk		Friends		Library Websites		Workshops		Lecturers /Teachers		Others	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	14	7.0	53	26.5	28	14.0	17	8.5	76	38.0	2	1.0
KSCOE	17	6.6	55	21.2	48	18.5	27	10.4	62	23.9	4	1.5
NBP	29	8.0	53	14.6	63	17.4	25	6.9	160	44.1	3	0.8
SICHST	12	9.4	13	10.2	22	17.2	6	4.7	69	53.9	6	4.7
TOTAL	72	7.6	174	18.3	169	17.8	75	7.9	367	38.6	15	1.6

Table4.11 indicated that teachers/lecturers were responsible for creating the greatest awareness of the presence of e-resources and services to students with a frequency of 367(38.6%). Another method that was also used to create awareness is by friends with 174 (18.3%) responses. The least source of information is from the reference desk in the libraries 72 (7.6%). The implication of this finding is that libraries of the selected institutions were not doing well in publicizing and bringing to the knowledge of their

patrons the available electronic resources and services. At the institutional level, the pattern of publicity is the same. Table 4.11 revealed that teachers and lecturers were doing the greatest publicity for the e-resources and services. This finding is in line with that of Kelly and Orr (2003) who discovered that the Teacher/Instructor was one of the best ways to learn about the library. This also suggests that a close linkage between libraries and teachers is important to ensure that students have information they need about e-resources.

4.2.10 Frequency of Use of Electronic Resources and Services

Respondents were asked to comment on how often they used electronic resources and services. The result can be seen in Table 4.12 below.

TABLE 4.12 Frequency of Use of Electronic Resources and Services

INSTITUTIONS	FREQUENCY OF USE									
	DAILY		WEEKLY		MONTHLY		NEVER		NO. RESPONSE	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
KASU	90	45	70	35	29	14.5	2	1.0	9	4.5
KSCOE	100	38.6	79	30.5	52	20.1	9	3.5	19	7.3
NBP	180	49.6	94	25.9	68	18.7	7	1.9	14	3.9
SICHST	66	51.6	33	25.8	24	18.8	2	1.6	3	2.3
TOTAL	436	45.89	276	29.05	173	18.21	20	2.1	45	4.73

Results in Table 4.12 revealed that 436 (45.9%) respondents used e-resources on a daily basis, 276 (29.1%) used them weekly while 173 (18.21%) used them monthly. 20 (2.1%) respondents indicated that they had never used them. This finding shows that most of the respondents used e-resources and services very frequently. The implication is that availability and awareness of the existence of e-resources will lead patrons to use digital resources very frequently.

4.2.11: Factors that hinder Use of E-Resources in the Institutions' Libraries

Table 4.13 below shows a scale that measures the factors that hinder the use of electronic resources in the selected tertiary institutions of Kaduna State.

TABLE4.13: Factors that Hinder Use of E-Resources

FACTORS	SCALE									
	SA	%	A	%	UD	%	SD	%	D	%
Computer Library	547	57.6	300	31.6	22	2.3	13	1.4	29	3.0
Adequacy of E-resources	397	41.8	397	41.8	49	5.1	35	3.3	42	4.4
Absence of Support	260	29.4	388	40.8	79	8.3	58	6.1	109	11.5
Absence ICT Technicians	292	30.7	403	42.4	103	10.8	32	3.4	49	5.1
Success in use	322	33.9	414	43.6	55	5.8	21	2.2	43	4.5

KEY: SA-Strongly Agreed; A-Agreed; UD-Undecided; SD-Strongly Disagreed; D-Disagreed.

From Table 4.13, it can be seen that 547 (57.6%) respondents strongly agreed and 300 (31.6%) agreed that computer literacy was a determining factor in the use of electronic resources. On the adequacy of e-resources, 397 (41.8) respondents apiece strongly agreed and Agreed that electronic resources were not adequate in number in the selected tertiary institutions' libraries as to enhance use. On whether the absence of library staff as support made the use of electronic resources more difficult; results revealed that majority of respondents i.e 388 (40.8%) agreed while 260 (27.4%) agreed strongly that it was true. This result is an indication that users of electronic resources require adequate computer skills to enable them take advantage and maximize their full potentials. Respondents were also asked if the absence of ICT technicians hindered their use of electronic resources in anyway, to which 403 (42.4%) agreed that it was true while 292(30.7%) strongly accepted the conditions to be true. 414 (43.6% of the respondents also agreed that when they succeed in the use of electronic resources their interest was sustained. Other factors that ranked high in inhibiting the successful use of electronic resources include – unstable power supply with 395 (41.6%) responses, unstable network with 272 (28.6%) response. Sarasvady and Khatri (2009) in their study of use of electronic resources for implementing library consortia discovered that lack of net

connectivity is a main cause for the non preference of electronic resources by respondents. This has been corroborated by the findings of this study.

4.3 Testing the Hypotheses

This study has four hypotheses as follows:

1. There is no significant difference in the provision of electronic resources and services among the libraries of the tertiary institutions of Kaduna State.
2. There is no significant difference in the availability and use of electronic resources among the tertiary institutions of Kaduna State.
3. There is no significant difference in the awareness and use of electronic resources among the libraries of tertiary institutions in Kaduna State.
4. There is no significant relationship between awareness and use of electronic resources and services in the tertiary institutions of Kaduna State.

The t-test statistical tool was used to test hypothesis 1 to 3, while the Pearson Product Moment Correlation (PPMC) was used to test the relationship between awareness and use of electronic resources in hypothesis 4.

HYPOTHESIS 1

There is no significant difference in the provision of electronic resources and services among the libraries of the selected tertiary institutions of Kaduna State.

Table 4.14A DIFFERENCES IN PROVISION OF ELECTRONIC RESOURCES AND SERVICES.

Variable	N	$\sum X$	SD	t- cal	t- crit	P	Df	Remarks
E-resources	12	3166	23947.45	83.3	1.753	0.05	16	Significant
E-services	6	1335						

Table 4:14B COMPARISM OF DIFFERENCES IN PROVISION OF ELECTRONIC RESOURCES AND SERVICES

Institution	N	X	SD	SE
KASU	200	1196	1270.36	17.82
KSCOE	259	985	176.24	6.64
NBP	363	1850	2795.76	26.44
SICHST	128	466	329.99	9.08

950

N-Number of respondents, X-Frequencies of respondents, SD-Standard Deviation, SE- Standard Error.

Table 4.14A reveals that the calculated t-value (t-cal) of 83.3 is greater than the critical t-value (t-crit.) of 1.753 at a 0.05 level of significance with a df 15. This shows that the result is significant. Therefore, the hypothesis is rejected since there is significant difference in the provision of electronic resources and services in the tertiary institutions of Kaduna State. The implication of this is that there is a difference in funding received by the various institutions hence the difference in the quantity of resources and variety of services provided in different institutions.

HYPOTHESIS 2

There is no significant difference in availability and use of electronic resources among the selected tertiary institutions of Kaduna State.

TABLE 4.15A DIFERENCES IN AVAILABILITY AND USE OF ELECTRONIC RESOURCES AND SERVICES

Variable	N	$\sum X$	SD	t- cal	t- crit	P.	Df	Remarks
Availability of E-resources	8	1933	4082.26	28.57	1.734	0.05	18	Significant
Use of E-resources	12	2683						

Table 4.15B COMPARISM OF DIFFERENCES IN AVAILABILITY AND USE OF ELECTRONIC RESOURCES AND SERVICES

Institution	N	X	SD	SE
KASU	259	1172	193.71	19.63
KSCOE	259	1045	1466.08	51.37
NBP	363	1867	1103.86	45.19
SICHST	128	480	250.87	21.54

950

N- Number of respondents, X-Frequencies of respondents, SD-Standard Deviation, SE- Standard Error.

Results in Table 4.15A has shown that the calculated t-value (t-cal) of 28.57 is greater than the t-critical (t-crit.) value of 1.734 at 0.05 level of significance with a df 18. The result is significant, therefore the hypothesis is rejected since there is a significant difference in availability of electronic resources and their use in the institutions.

HYPOTHESIS 3

There is no significant difference in the awareness of availability and use of electronic resources and services among libraries of the selected tertiary institutions of Kaduna State.

TABLE 4. 16A DIFFERENCES IN THE AWARENESS OF AVAILABILITY AND USE OF ELECTRONIC RESOURCES AND SERVICES

Variable	N	$\sum X$	SD	t- cal	t- crit	P.	Df	Remarks
Availability of E-resources	6	864	8961.54	47.33	1.746	0.05	16	Significant
Use of E-resources	12	2683						

Table 4.16B. DIFFERENCES IN AWARENESS AND USE OF ELECTRONIC RESOURCES AND SERVICES.

Institution	N	X	SD	SE
KASU	200	922	377.46	9.71
KSCOE	259	787	1232.77	17.56
NBP	363	1450	1540.04	19.62
SICHST	128	388	509.31	11.28

950

N- number of respondents, X-Frequencies of respondents, SD-Standard Deviation, SE- Standard Error.

The result in Table 4.16A indicated that the calculated t-value (t-cal) of 47.33 is greater than the critical t -value (t-crit.) of 1.746 at 0.05 level of significance. Therefore, the hypothesis is rejected since there is a significant difference in the awareness and use of electronic resources in the selected tertiary institutions of Kaduna State.

HYPOTHESIS 4

There is no significant relationship between awareness and use of electronic resources and services among the selected tertiary institutions of Kaduna State.

TABLE 4.17: CORRELATION BETWEEN AWARENESS AND USE OF ELECTRONIC RESOURCES AND SERVICES

Variable	N	ΣX	r-cal	r-crit	Df	P	Remark
Awareness of E-resources	4	854	3.79	0.707	6	0.05	Significant
Use of E-resources	4	2683					

The Pearson Product Moment Correlation was used to show the relationship that existed between awareness and use of electronic resources. Table 4.17 reveals the calculated value of correlation (r-cal) of 3.79 is greater than the critical correlation (r-crit) value of 0.707 at 0.05 level of significance with a degree of freedom (df) of 6. The result is significant. Therefore, the hypothesis is rejected since there is a significant relationship between awareness of the availability of electronic resources and their use. The implication is that the more library patrons are aware of the availability of electronic resources, the more they will be attracted to their use.

REFERENCE

- Armstrong C., and Lonsdale R., (2006) E-Resources Management Handbook. A general overview of the E-Resources industry
<http://www.uksg.org/sereals/handbook.asp> html. 10/8/2009
- Ashcroft, L. s(2005) ICT skills for information professionals in Developing countries: Perspectives from a study of the Electronic Information Environment in Nigeria. World Library and Information Congress, 70th IFLA General conference and council Buenos Aires Argentina. Available at <http://www.ifla.org/iv/ifla70/prog04.htm> 10/8/2009
- Kelly, K.B. and Orr G.J. (2003) Trends in Distant Student Use of Electronic Resources: A Survey. *College and Research Libraries* 64:176-191.
- Sarasvady, S. and Khatri, N.K. (2009) A Study of the Use of Electronic Resources for Implementing Library Consortium.
- Sharma, C. (2009) Use and Impact of Electronic Resources at Guru Singh Indraprastha University (India): A Case Study. *Electronic Journal of Academic and Special Librarianship* 10 (1) 1-10
- Tenopir, C. (2003) Use and Users of Electronic Library Resources: An Overview and Analysis of Recent Research Studies Council on Literary and Information Resources. Washington D. C. available at <http://www.uir.org/pubs/reports/pubs120/contenthtml>
- Waldman, M. (2003) Freshmans Use of Library Electronic Resources and Self Efficacy. *Information Research* 8 (2) 1-39

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This Chapter provides a summary of the study, its findings, conclusion, recommendations and suggestions for further reading.

5.2 Summary of the Study

The study gives a historical background of how libraries today have brought radical changes in the way information is gathered, stored, organized, accessed and retrieved away from the traditional service model. The application of computers in information processing has brought several products and services to the scene. The study has also given reasons for using electronic resources and services, some of which include study, research, socialise, chat, and to check or send mails. Efforts to provide electronic resources and services by Libraries in tertiary institutions are met, with challenges and problems which must be addressed in order to enhance patrons' search and retrieval of information through such technologies.

The purpose of this study was to bring into focus the availability or non availability of electronic information resources and services in the libraries of selected tertiary institutions of Kaduna State. It was also aimed at discovering the use or non use of these resources and services by the library patrons and to reveal problems encountered in the use by these patrons in the course of their use

The study used the survey research method because it allows a study of both large and small populations and helps to discover incidence and interrelations of variables. The population studied consisted of users of the libraries of the selected tertiary institutions of

Kaduna State. These included librarians and Library staff, students, academic and non academic staff of these institutions.

Data were collected through the use of questionnaires, interviews with the librarians of the selected institutions, and personal observations. The questionnaire is an instrument used to collect basic descriptive information from large samples. A twenty-four item questionnaire was constructed to draw information from the respondents. The questions were both open and close ended. The close ended questions provided options itemized to help respondents provide relevant answers to the questions while open ended questions gave respondents the opportunity to freely express their opinions and feelings.

The interview is a technique used for collecting information from persons on a face to face interaction. An oral interview was conducted with the heads of the libraries by the researcher to get information in areas where respondents could not respond clearly to questions in areas that were not covered by the questionnaire.

Observation involves the use of the sense of sight to examine and assess the availability or absence of the electronic resources and other prevailing conditions in the selected institutions. The researcher used observation to gather information from the institutions

The questionnaire were administered and retrieved by the researcher with the help of research assistants from the various institutions. The interview was conducted with heads of the libraries of the selected institutions. The study used the survey research method and collected data through the use of questionnaires personal observations and interviews. The data was analysed using descriptive statistics, tables and percentages for easy understanding. Three of the four hypotheses were tested using t-test because they

tested differences while the fourth hypothesis was tested using the Pearson Product Moment Correlation (PPMC) because it tested relationship.

5.3. Summary of the Findings

1. The findings of this study revealed that provision of electronic resources was at a low level in the selected institutions. This was because the institutions depended on government funding which might or might not come at all. So, they heavily relied on the Education Trust Fund (ETF) intervention which is not adequate to provide them with the necessary electronic resources. This implies that government must improve funding for electronic resources to be able to increase their quantity in the institutions.
2. It was discovered from the data collected that all the selected institutions had the following electronic resources – computer, VCD, DVD, and Internet access, full text articles, online databases, e-journals, e-books, multimedia, CD-ROMS and flash drives.
3. Data analysis revealed that email, online reference and electronic alerts are services that were best known and used by the respondents. The OPAC was not well known.
4. The findings in this study showed that the most common source of information for awareness of electronic resources and services by users in the institutions is through teachers/lecturers and friends. Most respondents had no knowledge about these resources and services from workshops and libraries' reference desks.
5. Most patrons used electronic resources and services more on a daily and weekly bases. It was also discovered that a very small percentage never used them at all.

6. Computer literacy, inadequacy of electronic resources, absence of library staff assistance, absence of ICT technicians, success in the use of electronic resources, can discourage patrons from using electronic resources.
7. There is a significant difference in the quantity of resources and variety of services provided in different institutions.
8. There is a significant difference in availability of electronic resources and their use in the institutions.
9. There is a significant difference in the awareness and use of electronic resources in the tertiary institutions of Kaduna State
10. There is a significant relationship between awareness of the availability of electronic resources and their use in the tertiary institutions of Kaduna State.

5.4 Conclusion

The tertiary institutions studied have generally kept pace with the rest of the academic societies in providing electronic resources. The study discovered that the Kaduna State University, Kaduna leads all the other institutions. This is followed by Nuhu Bamali polytechnic Zaria, then Kaduna State College of Education Gidan Waya and Shehu Idris College of Health Science and Technology, Makarfi have relatively smaller collections of electronic resources. The study discovered that all institutions and their libraries have electronic resources like computers, VCD, DVD, flash drives. Similarly, the most available electronic services to users are the E-mails, online reference and electronic Alerts. Findings revealed that all libraries were yet to provide a service like the OPAC which is a common tool used to access the Library's resources. On the use of electronic resources, the findings have shown that computers, internet and flash drives were used most by students and other members of the academic

communities. Also, users were more aware of electronic resources which can be available outside the library.

The main problem that inhibit the provision and effective use of electronic resources was funding which is grossly inadequate, while the problems that relate to operations were unstable power supply and service networks.

It is concluded that when electronic resources are made available in our tertiary institutions, it will boost teaching, learning, research and other scholarly and professional activities through improved communication and access to information. Many users would resort to use them consequently this would enhance development in our institutions and the country at large.

5.5 Recommendations

In the light of the findings, the following recommendations are made.

1. Since the ability to provide for electronic resources and services depend largely on the availability of funds, provision should not be left to ETF alone but managements of the various tertiary institutions in the State should make concerted efforts through consultations and talk shows to impress on government regarding the value of electronic resources in enhancing research and training; hence the need for adequate funding to be able to provide these electronic resources. In addition, the institutions should ensure that sufficient networked computers are available for students use.
2. Information retrieval skills training should be embedded in the curriculum undertaken at the appropriate times and supported by academic staff. The academic staff must be aware of the services which are most beneficial to their courses and therefore their students.

3. Libraries in general need to determine how the pattern of electronic resources use affect the make up of the physical library's client to ensure that services offered are those most needed by such users. In addition librarians need to consider how the libraries' resources, services and instructions' programs are arranged to meet the needs of their whole population especially those who need assistance to use libraries resources and services effectively.

5.6 Suggestions for Further Research

1. Further research is necessary to show how best to encourage students to make effective use of the electronic resources that are available in the tertiary institutions of Kaduna State.
2. The findings of this study did not indicate that students are relying more on electronic resources and online web based resources than on the physical print materials, a research is necessary to determine this.

BIBLIOGRAPHY

- Abel, E. G., Liebcher, P., and Dinman, D. W. (1996), "Factors that influence use of electronic networks by science and engineering faculty at small institutions". Part 1 queries. *Journal of the American Society for Information Science*, 47(2):146 – 158.
- Agaba, D. M. et al (2007) Utilization of Electronic Information Resources by Academic Staff at Makerere University.
- Aina, L. O., Mutula, S. M., Tihamiyu M. A.(2008), Information and Knowledge Management in the Digital Age- Concepts, Technologies and African perspectives. Ibadan, Third World Information Services Ltd. Pg 101-121.
- Armstrong C., and Lonsdale R., (2006) E-Resources Management Handbook. A general overview of the E-Resources industry
<http://www.uksg.org/sereals/handbook.asp> html. 10/8/2009
- Anunobi, V. C. (2005) ICT Availability and use in Nigerian University Libraries. *Global Review of Library and Information Science* 1 (1): 19-29
- Ashcroft, L. and Watts, C. (2005) ICT skills for information professionals in Developing countries: Perspectives from a study of the Electronic Information Environment in Nigeria. World Library and Information Congress, 70th IFLA General conference and council Buenos Aires Argentina. Available at <http://www.ifla.org/iv/ifla70/prog04.htm> 10/8/2009
- Aina, L. O., Mutula, S. M., Tihamiyu, M. A. (2008), Information and Knowledge Management in the Digital Age-Concepts, Technologies and African Perspectives. Ibadan, Third World Information Services Ltd. Pg 101-121
- Akintoye, I. R. (2008) "Optimising output from tertiary educational institutions via adequate funding: A lesson from Nigeria". *International Journal of Finance and Economics*, 14: 359-368.
- A. L. A. (2005) Access to Electronic Information Services and Networks: An Interpretation of the Library Bill of Rights.
- Borgman C. (1997) From Acting Locally to thinking globally: A brief history of Library Automation. *Library quarterly* 67(3): 13
- Borgman, C. L. (2000) Digital Libraries and the continuum of scholarly communication. *Journal of Documentation* 56 (4): 412 – 430
- Borgman, C. L. et al (1996) Rethinking online monitoring methods for information retrieval systems: from search product to search process. *Journal of the American society for Information Science*. 47(7):568 – 583.
- Brophy, P. (1993) Networking in British Academic Libraries. *British Journal*

- of Academic Librarianship* 8 (1) 49-60.
- Bruce, H. (1998) User satisfaction with information seeking on the internet. *Journal for the American Society for Information Science* 49(6): 541 – 556.
- Cherry, J. M. and Duff, W. M. (2002) Study of Digital Library Users over time: A follow-up survey of early Canadian online. *Information Research*_7(2) Available at <http://www.information.net/ir/7-2/paper123.html>. 10/8/2009
- Chris, A. et al (2001) A study of the use of Electronic Information Systems by Higher Education Students in the UK *Program* vol. 5 (3): 241-262
- Dahi, M., et al., (2006), Digital Libraries: Integrating content and system. Great Britain, Clauto publishing Ltd.
- Dutton G. B. (1990) An Introduction to End user searching. In Bysouth P. T (ed.) end-user searching, the effective gateway to published information London: *ASLIB* 1-18.
- Eason, K., Richardson, S. and Yu, L. (2000). Patterns of use of electronic journals. *Journal of Documentation* 56(5): 477 – 504.
- Ehikhamenor, F. A. (2003) Internet facilities: Use and Non-Use by Nigerian University scientists. *Journal of Information Science* 29(1): 35-48.
- Ekeh, F. I. (2003). Research Methodology and Statistics in Education. Nsukka: Madol Press
- Hartley, R. J. (2003) Electronic Information Resources. In: International Encyclopaedia of information and library science. Edited by John Father and Paul Sturges USA Routledge.
- Hawthorne, D. (2008) History of Electronic Resources. <http://www.igi-pub.com>. 10/8/2009.
- Howe W., (2009) A Brief History of the Internet. <http://www.walthowe.com/navnet/history.html> 10/08/2009.
- Ibrahim A. E. (2004) Use and User perception of Electronic Resources in the United Arab Emirate University (UAEU) *Libri* 54 :18 – 29.
- Idowu, A. O. and Mabawonkwu (1999) Information Technology Facilities and applications in some Nigerian Research and University Libraries. *African Journal of Library Architecture and Information Science* 9(10): 27 – 35.
- Iljon, A. (1998) Objectives and Strategies: Creating a platform for the library in the information society. *IFLA Journal* 24(2): 89.
- Jen, S. U. (2002). Fundamentals of Research Methodology. Yola: Paraclete

- publishers.
- Kelly, K.B. and Orr G.J. (2003) Trends in distant student use of electronic resources: A Survey. *College and Research Libraries* 64 176-191.
- Kibirge, H. M. and Dapalo, L. (2000) The Internet as a source of academic research information; Findings of two pilot studies.....
- Kidd, T. (2002) Electronic Journal usage statistics in practice *Serials* 15(1) 11, 17.
- Liew C. L., Foo S. and K. R. Chennupati (2001) Towards a New Generation of Information Environment for the use of E-documents. *Journal of Information Science* 27(5): 327-342.
- Montgomery, C. H. and D. W. King (2002) comparing library and user related costs of print and electronic journal collections. A first step towards a comprehensive analysis. *D-Lib* 8 (10) Available at <http://www.dlib.org/dlib/October02/montgenery/10montgenery.html> 10/8/2009
- Mulla, K. R. and Chandrashekara, M. (2005). E-Resources and services in engineering college libraries – A case study. *Electronic Journal of Academic and Special Libraries*. 7(1): 1-14.
- Mutshewa, A. K. N. Rao (2000) Enhancing access through e-resources: The university of Botswana experience. *Library hitech* 18 (4): 315-320.
- Norris P. (2001) Digital Divide: Civic engagement information poverty and the internet worldwide. Cambridge University Press Cambridge England.
- Nwakanma C. D. (2003) Information Technology Competences: Identifying knowledge depths for library and information science education. *Canadian journal of information and library science* 27(4): 75 – 76.
- Okore, A. M. (2005) The challenges of information communication Technologies (ICTs) for Nigerian Academic Libraries. *Global Review of Library and Information Science*. 1(1) 84 – 93
- Okpareke, C. G. (2007), Nigeria: Role of tertiary institutions in national development. *Daily Champion* 16 May 2007.
- Osuala, E. C. (2005). Introduction to Research Methodology. Nimo: Rex Charles and Patrick
- Palmer J. P and Mark Sander (2003) what do Faculty want? *Net Connect (winter)* 26 – 28

- Pullinger D. (1999) Academics and the New Information Environment: The impact of Local Factors on the use of Electronic Journals. *Journal of Information Science* 25(2): 164-172
- Ranganathan, S.R. (1963). The five laws of library science. Bombay, India: Asia Publishing House.
- Ray, K. and Day J. (1998) Students attitude towards electronic information resources. *Information research* 4(2): 1 – 30.
- Rosenberg, D. (2005) Towards the Digital Library: Findings of an investigation to establish the current status of university libraries in Africa. INASP Oxford
- Saliu, H. A. (2004). A Guide on Research Proposal and reporting. Ilorin: University of Ilorin. pp95-101
- Sarasvady, S. and Khatri, N.K. (2009) A study of the use of electronic resources for implementing library consortium.
- Sharma, C. (2009) Use and impact of electronic resources at Guru Singh Indraprastha University (India): A Case Study. *Electronic Journal of Academic and Special Librarianship* 10 (1) 1-10
- Shim, W. J. et al (2001), Measure and statistics for research library networked services: procedures and issues (ARL E-Metrics Phase 11 Report). Washington DC: Association of Research Libraries. <http://www.arl.org/stats/newmeas/emetrics/phasetwo.pdf> 15/7/2008
- Steinmuella W. F. (2001) ICTs and the possibility for Leapfrogging by developing countries. *International Labour Review* 140 (2) 193 – 210.
- Tamaro, A. M. (2006) The Digital Library Users: Case Study on Needs Expectations and Skills.
- Tenopir, C. (2003) Use and Users of Electronic Library Resources: An overview and Analysis of Recent Research Studies Council on Literary and Information Resources. Washington D. C. available at <http://www.uir.org/puls/reports/pubs120/contenthtml> 15/7/2008
- Torma, S. and Vakkari, P. (2004) Discipline, Availability of Electronic Resources and the use of Finish National Electronic Library – Fin Elib. *Information Research* 10(1): 1 – 15.
- Valentine, B. (1993) Undergraduate research behaviour: Using focus groups to generate theory. *Journal of academic librarianship* 19(5): 300 – 304.
- Voorbij, H. J. (1999) Searching Scientific Information on the internet: A

- Dutch academic user survey. *Journal of the American Society for Information Science* 50(7): 598 – 615.
- Waldman, M. (2003) Freshmans Use of Library Electronic Resources and Self efficacy. *Information Research* 8 (2) 1-39.
- Watts C., Ibegbulam I. (2005) Access to Electronic Health care information resources in Developing countries: Experiences from the Medical Library, college of Medicine, University of Nigeria. World Library and Information Congress 71 IFLA General Conference and Council.
- Weingart, S. J. and J. A. Anderson (2000) when questions are answered; Using a survey to achieve Faculty awareness of library's Electronic Resources. *College and Research Libraries* 127 – 134.
- Whitmire, E. (2001) The relationship between undergraduates background characteristics and college experiences and their academic library use. *College and Research Libraries* 62(6) 528-540
- Weitz L. (2006) Cataloguing Electronic Resources: OCLC-MARC coding Guide-lines.<http://www.oclc.org/bibformat/default.htm15/7/2008>

Appendix 1
REQUEST TO FILL QUESTIONNAIRE

On

Availability, Awareness and use of Electronic resources and services in selected Tertiary Institutions in Kaduna State.

Dear Sir/Madam

I am a Post Graduate Student at the A.B.U. in the Library and Information Science Department undertaking a research in partial fulfillment of the requirement for the MLS Programme. I will appreciate your response in the supply of information relating to the above subject matter by filling the attached questionnaire.

The information provided shall be treated in confidence and used strictly for the purpose of the research.

Yours Sincerely

Titus G. Yunana.

Appendix 2

QUESTIONNAIRE ON AVAILABILITY, AWARENESS AND USE OF
ELECTRONIC RESOURCES AND SERVICES IN SELECTED TERTIARY
INSTITUTIONS IN KADUNA STATE.

A DEMOGRAPHIC DATA

INSTRUCTION- Please tick (√) the most appropriate answer to the following questions.

1. Your Institution

2. What is your gender Male Female

3. What is your age?
a. Less than 21 Years
b. 21-25 years
c. 26-30 years
d. Over 30 years

4. Status
a. Student
b. Academic Staff
c. Non academic staff
d. Others (Please specify).....

5. Highest Qualification
a. SSCE, GCE, TCII
b. OND, NCE
c. HND, B.Sc, BA, BLS
d. MSc, MA, MLS
e. PhD.
f. Others (Please specify).....

B. AVAILABILITY OF ELECTRONIC RESOURCES

6. Below is a list of electronic resources. Please tick the one(s) you own.

a. computer
b. VCD
c. DVD
d. CD-Rom
e. Flash drive
f. VCD/DVD player
g. Internet
h. Electronic books/journals.

7. Where do you access a computer?

a. At home
b. At school
c. At work
d. From a friend
e. Others (Please specify).....

8. Do you have access to Internet? YES NO

9. Where do you access the Internet?

- a. At home
- b. At school
- c. At work
- d. At cyber café
- e. Others (Please specify).....

C. AWARENESS OF THE PRESENCE OF ELECTRONIC RESOURCES

10. How did you learn about the library's electronic resources?

- a. From the reference desk
- b. From friends
- c. From the library's website
- d. From a workshop
- e. From lecturers/teachers
- f. Leaflets from library

Others (Please specify).....

D. KNOWLEDGE OF ELECTRONIC RESOURCES AND SERVICES

11. Below is a list of electronic resources, please tick (√) the one(s) you know.

- a. Full text articles
- b. Library websites
- c. Online Databases
- d. Electronic Books
- e. Electronic journals
- f. CD-ROMS
- g. Internet websites
- h. Multimedia
- i. VCD, DVD
- j. Fax
- k. Flash Drive
- l. Others (Please specify).....

12. Below is a list of Electronic services, please tick (√) the services you know.

- a. OPAC
- b. Portal/Gateways
- c. Online Reference work
- d. Emails
- e. Bulletin Boards
- f. Electronic Alerts
- g. Others (Please specify).....

E. USE OF ELECTRONIC RESOURCES AND SERVICES.

13. Which of these electronic resources can you use?

- a. Full text articles
- b. Library websites
- c. Online Databases
- d. Electronic Books
- e. Electronic journals
- f. CD-ROMS

- g. Internet websites
 - h. Multimedia
 - i. VCD, DVD
 - j. Fax
 - k. Flash Drive
 - l. Computer
 - m. Others (Please specify).....
14. Which of these electronic services can you use ?
- a. OPAC
 - b. Portal/Gateways
 - c. Online Reference work
 - d. Emails
 - e. Bulletin Boards
 - f. Electronic Alerts
 - g. Others (Please specify).....
15. How often do you use electronic resources and services?
- a. Daily
 - b. Weekly
 - c. Monthly
 - d. Never
16. What are your reasons for using electronic resources and services ?
- a. Study
 - b. Research
 - c. Socialize
 - d. Chat
 - e. To check or send electronic mails
 - f. Others (Please specify).....
17. To find information do you usually start your search looking through
- a. Electronic books
 - b. Electronic journals
 - c. Electronic Databases
 - d. Internet on Campus
 - e. Internet at home
 - f. Others (Please specify)

F. FACTORS THAT INFLUENCE THE USE OF ELECTRONIC RESOURCES

18. Computer literacy is important in the use of electronic resources
- a. Strongly Agreed
 - b. Agreed
 - c. Undecided
 - d. Strongly disagreed
 - e. Disagreed
19. Adequacy of electronic resources influences their use
- a. Strongly Agreed
 - b. Agreed
 - c. Undecided
 - d. Strongly disagreed

- e. Disagreed
20. The absence of library staff support makes the use of electronic resources difficult
- a. Strongly agreed
- b. Agreed
- c. Undecided
- d. Strongly disagreed
- e. Disagreed
21. Absence of ICT technicians to maintain electronic resources impedes their use.
- a. Strongly agreed
- b. Agreed
- c. Undecided
- d. Strongly disagreed
- e. Disagreed
22. Success in the use of electronic resources encourage their continued use
- a. Strongly agreed
- b. Agree
- c. Undecided
- d. Strongly disagreed
- e. Disagreed
23. Which of these impedes your use of electronic resources, please tick.
- a. Lack of Computer literacy
- b. Unstable network
- c. Unstable power supply
- d. Lack of enough computers
24. Please comment on the provision and use of electronic resources in your school library.....
-
-
-

Appendix 3

INTERVIEW SCHEDULE ON THE AVAILABILITY, AWARENESS AND USE OF
ELECTRONIC RESOURCES AND SERVICES IN SELECTED HIGHER
INSTITUTIONS OF KADUNA STATE.

LIBRARIANS INTERVIEW SCHEDULE

A- Demographic data.

1. Name of institution.....
2. Name of library
3. Year of establishment
4. For how long have you served in this institution?
.....
5. Number of library staff

 - a. Librarians.....
 - b. Library officers.....
 - c. Other library staff.....
 - d. Number of staff with ICT competence

B Funding

6. Is there a separate funding for electronic resources in the library?
Yes..... No.....
7. In the last five years, funding for electronic resources has been as follows
 - a. 2005.....
 - b. 2006
 - c. 2007
 - d. 2008
 - e. 2009
8. How adequate has the funding been?
 - a. Very adequate
 - b. Adequate
 - c. Inadequate
 - d. Very Inadequate
 - e. Fairly Inadequate

C Available Electronic resources and use.

9. How many computers do you have for the library?

10. Which of these electronic resources has your library acquired?

Please tick as many as are applicable.

a. Electronic Journal,

b. Electronic books,

c. CD-ROMs , DVDs, VCDs

d. Databases,

f. Multimedia

g. Fax

h. Printers

i. Scanners

j. Photocopiers

k. Others (Please Specify).....

11. How many live Data bases do you subscribe to?

12. What do you use your computer for?

a. Teaching,

b. Word Processing,

c. Data Storage,

D- Available Electronic Information Services

13. Which of these electronic services does the library offer? Please Tick.

a. OPAC,

b. Bulletin boards,

c. E-mails,

d. Online reference work,

e. Portals/ Gateways

f. Selective Dissemination of Information

g. Any others (Please Specify).....

E- Awareness Created for the existence of electronic resources and services

14. Which of these media do you use to inform users of the availability of electronic resources? Please tick.
- a. E-mails
 - b. User education/ orientation
 - c. Personal contacts through phones
15. Is there Internet connection in the institution?
16. Is the library connected to the Internet network?
17. How would you describe the speed and the status of connectivity for the library?
- a. Excellent, fast and reliable.
 - b. Good, quick and reliable.
 - c. Adequate and acceptable.
 - d. Poor, generally slow.
 - e. Very Poor, Very slow and unreliable.
18. Is the management of electronic resources and service within the library undertaken in a separate library department? Yes.....No.....
If yes, what is the name of the department?
19. Are staff and students offered training in the use of the electronic resources and services? Yes.....No.....
20. Comment generally on any problem(s) faced in the provision of electronic resources and services
-
-