

## Uses and Applications of ICTs in Nigerian University Libraries: The Case of UNN

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### **Abstract**

*The application of ICT has brought significant changes in Nigerian university libraries and this has led to automation, cataloguing, circulation, information retrieval, electronic documentary etc. given these inherent benefits and opportunities provided by ICT, the study therefore investigated the ICT usage and application in university of Nigeria , Nsukka library, with the aim of finding out the availability and usage of ICT facilities in this university, the purpose for using these facilities and the challenges encountered in using the ICT facilities. The study was anchored on two theories – the global village theory and technological determinism theory. The survey research method was used, with questionnaire and personal interview as data collection instruments. It was found that ICT facilities are available in UNN library but some are more available than others. The facilities mostly used are OPAC, internet and virtual library, which are used to source for reference materials, complete project work, up-date knowledge and lecture notes. The major challenge encountered in the use of ICT facilities as revealed by the findings, was irregular power supply and irregular cooling environment. Upon these findings, the study recommended among others the constant acquisition and provision of ICT facilities in the library by government and university management, and the provision of constant power supply in UNN library which will enhance effective functioning and usage of the ICT facilities.*

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**Keywords:** *Library; University; Nigeria; Applications; ICTs.*

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### **INTRODUCTION**

University libraries in Nigeria as integral academic parts of the universities that supports teaching, learning, research and personal development, generally started with the establishment of the first educational institution (university of Ibadan and its library) in 1948. Subsequently, there are as many university libraries as there are universities. The crucial function of library is to provide unlimited access to information with the increasing reliance on ICT. Libraries are now playing a significant role in implementing and moderating a country's information society programmes. University library is the hub of learning and research activities in academic institutions based on its information acquisition, organization, storage, and retrieval as well as dissemination functions to the community.

According to Ugwuanyi (2011) the achievement of the goals of the university is paramount to the establishment of the university library. Librarians are at the threshold of these activities and are now faced with the emergence of information technology in the scene of information exchange. This brought new tools and techniques of acquiring and handling information (p.4). Hence, Nigeria government has recognized the need for the development and

expansion of the education sector and ICTs has become the norm following the worldwide integration among countries. According to Aina (2010), ICT became a norm in the final two decades of the last century and its emergence could be attributed to some inter-related factors such as social, economic and technological changes of the past decades which are now providing more education and training for all than before (p.248).

Information and Communication Technology (ICT) has brought tremendous transformation to academic libraries and information services. Such areas of transformation and development occasioned by ICTs in academic libraries include; computing technology, communication technology and mass storage technology. This has reshaped the way that libraries access, retrieve, store, manipulate and disseminate information to the users. In other words, students and staff (library users) now use ICT facilities available in the universities to source for reference material, online journal as well as send and receive e-mail from within and outside the country.

Krubu and Osawaru (2010) state that applications of ICT are numerous but mainly it is used in converting the existing paper-print records in the entire process of storage, retrieval and dissemination. ICT presents an opportunity to provide value-added information services and access to a wide variety of digital based information resources to their clients. Furthermore, academic libraries are also using modern ICTs to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems, develop institutional repositories of digital local contents, and digital libraries: and initiate ICT based capacity building programmes for library users, Krubu and Osawaru (2010, p.5).

In recent times, every Nigerian university has recognized the importance if ICTs in revolutionizing its library. This is based on the fact that “both academic and public libraries play major roles in the manpower development of any Nation. Public libraries are to serve the general information needs of the public” (Solarin 2013, p.3). ICTs, which is an acronym for ‘Information and Communication Technology’ are technologies used to communicate, create, manage and distribute information. Such technologies include computers, the internet, telephone, television, radio and audiovisual equipment. According to Ugwuanyi (2011) the ICT literacy of a student is a relative measure of the student’s capacity to make appropriate use of ICT for educational and learning purposes. Likewise, the ICT literacy for librarians is relative measures of the librarians’ capacity to make appropriate use of ICT for information acquisition, organization, retrieval and dissemination as information professionals. This involves the level of skills needed by librarians to use computer for their work and to independently function in a web-based, on-line learning environment (p.3).

According to Omagbemi, Akintola and Olayiwola, (2004) cited in Solarin (2013), prior to the advent of ICT, the functioning of libraries in Nigeria has been cumbersome, time-wasting, without giving any room for flexibility. But with the introduction of ICT in Nigeria, particularly at the higher educational institutions there is simultaneous access for many users at the same time and it helps to close the global information gap and create brighter future for both staff and students. In the opinion of Oyinloye (2005), libraries of today have shifted from conventional libraries where mainly books and other printed text are acquired, arranged, consulted and borrowed. It has been observed that ICT is responsible for the changing role of traditional library setting from the handling to information packaged in books to that of computer networks dealing with all sorts of knowledge across international boundaries (Ani, 2005).

In Nigeria like in other countries, the need for globalization of library services as noted by Okebukola (2002) arises as a result of the fact that no single library can be completely sufficient in terms of acquisition and that network members make-up for their own shortfalls with the strengths of others. This actually means that users in a particular library can access other resources materials from other libraries within and outside the country through the use of relevant ICT facilities. For instance Librarians or any member of the academic community at the University of Nigeria, Nsukka library can now easily find out any information concerning any book in the Library of Congress in United States of America within a couple of minutes. ICTs have begun to exert massive transformation of education systems in developed countries-- distance education universities are now quoted on the stock exchange; the best teachers in the world are becoming available anywhere at the click of a button (2004).

ICT has become an indispensable educational tool in Nigerian university libraries for teaching, learning and personal development of users, both staff and students. It therefore behoves the university librarians to ensure that the method with which library users are taught to use library ICTs are firmly rooted within the relevant subject for academic purposes. They should be able to assist library users to search for and find high-quality information in a fast and effective manner. The capacity of users to exploit the ICT depends on the level of literacy, education and mastery of the technologies convened. Ugwuanyi (2011) citing Memuo (2002) notes that people should be sensitized to be able to use stand alone computers, use computer networks, primarily the internet, use basic applications such as word processing, spreadsheet, and electronic mail and possibly more advanced ones such as presentations, production of web pages, construction of websites, use of digital multimedia equipment and programs.

It has been observed that most universities including University of Nigeria, Nsukka and other research libraries have been registered with databases such as AGORA, HINARI, ARDI, OARE, CAB, AGRIS, BLACKWELL, ELSEVIERE etc. As such, a researcher in any of these libraries can access relevant research information from these databases. Because of the existing cooperation among the AGORA publishers and other database providers, it is possible for researchers to have access to these databases through AGORA from any of the registered libraries (Ani, 2005, Aina 2010, p.251). Furthermore, Nigerian academics and researchers now have access to academic resources in the National Virtual Library operated by the National Universities Commission (NUC). It is believed that when other virtual libraries effectively evolved in Nigerian universities, there will be more global interaction among them in order to best serve their users.

## **STATEMENT OF PROBLEM**

In recent times, the use of ICTs is inevitable for any library, especially academic libraries. Despite the tremendous impact of ICT on Nigerian University Libraries and library users, the Nigerian academic libraries still encounter some hindrances in the effective adoption and use of the ICT resources in the library. However, the challenges associated with adopting ICT resources for library services are not peculiar to University of Nigeria, Nsukka library. They are also encountered in different degrees in many academic libraries in Nigerian institutions. It is therefore these challenges that this study seeks to address through the under listed objectives.

## **OBJECTIVES OF THE STUDY**

The objectives of the study are to find out:

1. The availability of ICTs in University of Nigeria Nsukka Library
2. The ICT facilities used by the staff and students of the (UNN) library
3. The purpose for which they use the ICT resources
4. The challenges encountered in using the ICT facilities.

### **RESEARCH QUESTIONS**

The following questions served as guide to the study:

1. What ICTs resources are available for users in University of Nigeria Nsukka Library?
2. What are the ICT resources mostly used by the staff and students of the (UNN) library?
3. For what purpose do they use the ICT resources?
4. What challenges are encountered in using the ICT resources?

### **LITERATURE REVIEW**

The importance of information networks and infrastructure such as local area network (LAN), virtual libraries and other virtual structure in accelerating the globalization of library services and subsequent transformation of library practices in the Nigeria has gained significant recognition. Globalization usually made possible through ICTs has brought a significant change in University libraries, including Nigeria. This is confirmed in Aina's study (2010) that there has been dramatic adoption of ICTs in Nigerian libraries and this has led to globalization of library services in the country. In his study, Oketunji (2004) asserts that the Internet and other ICTs provide a golden opportunity for the provision of value-added services by libraries. Indexing, abstracting and publication of local research and their digitization are means of facilitating learning.

### **AVAILABILITY OF ICT FACILITIES**

The study carried out by Ugwuanyi (2011) revealed that there are ICT facilities in the south-east universities studied as indicated by more than 75% of the respondents in each university. The facilities available are: computers, interconnectivity, LAN, CD-Writer, cataloguing software power point projector and scanner. The respondents equally agreed that they are functional where they are available but those who indicated not available automatically indicated not functional. The results for the analysis by Ugwuanyi (2011) revealed that more than 75% of the respondents agreed that most of the ICT facilities are available and functional in University of Nigeria, Nsukka. The findings of Solarin (2013) on availability of ICT resources and services for uses by both faculty and students, showed that Covenant University library has very good ICT resources and Internet service has greater usage. This is also confirmed by Ilo and Ifijeh (2010), study that 94% of final year students at Covenant University indicated that the internet had greater impact on their projects.

The Internet and its technology available in university libraries continues to have a profound effect in promoting the sharing of information especially in academic world, making possible rapid transactions among businesses and supporting global collaboration among individuals and organizations. Learning Resource Centres now often contain learning materials published on CD-ROM and most colleges and universities are connected to the Internet. But Ogunsola in his (2004) study confirmed that many university libraries in Nigeria are yet to take advantages of modern ICT. Also, Emojorho (2010) in a study on ICT and collection management in public libraries, found that only a few public libraries in the south-south, Nigeria

are computerized and do make use of internet. Moreover, they are not adequately funded. Blakes (2006) in discussing the availability of ICT facilities and resource sharing noted that the ICT facilities in the Nigerian academic libraries are not adequate in number and for digital or electronic library operations.

The availability of ICT facilities are crucial in the present globalized world. However, it has been observed that these facilities lacking in most Nigeria universities. Onyeneke (2007) cited in Ugwuanyi (2011) pointed out that the unavailability of some ICT resources such as internet, E-mail, computer conferencing, fax machines, digital cameras, digital scanner, online information sources, and others is the major problem and challenges facing the use of ICT in tertiary institutions in Nigeria. The researcher further noted that inadequate technological infrastructure to support the integration of ICTs in the library services manifests in poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of personal computers and their peripherals and low bandwidth (P.14).

### **PURPOSE FOR WHICH ICT RESOURCES ARE USED**

Information and communication technologies serve several purposes ranging from information access, dissemination and storage, research, accessing of online journals and documentation. A study conducted by Krubu and Asowaru (2010) found that the major reason attached to the use of ICT resources was for information storage and retrieval and that the ICT resources mostly used are CD-ROM, online database, World Wide Web and the Internet. The study also revealed that ICT has an enormous impact on Nigeria libraries and their users based on its effectiveness.

### **HINDRANCES TO THE USE OF ICT RESOURCES/FACILITIES**

Many Nigerian libraries, especially in the universities, face various problems in their attempts to digitalize their library operations. These problems are not really of the library's making but it is the usual problem confronting most of the computer installations all over the country today - the shortage of manpower and lack of spare parts. However, the findings of Krubu and Asowaru (2011) revealed that inadequate training and retraining of staff by management; inadequate funding, epileptic power supply and lack of search skills are the major factors militating against the effective use of ICT in Nigerian University libraries. Amongst others, inadequate funding, capacity building, regular power supply were recommended.

Also Aina (2010) identified the negative laissez-faire attitude of lecturers, students, and libraries as other factors militating against the development and use of ICT in university libraries in Nigeria. This researcher further pointed out the high cost of ICT training but opined that library staff and users should do something on their own to improve their IT skills. Womboh and Abba (2008) noted that a laissez-faire attitude of lecturers, students and even librarians by feeling that their employers should train them in ICT hinders ICT development in University libraries. Similarly, Krubu and Osowaru (2011) reveals some factors hindering the impact of ICT use in Nigerian university libraries as lack of search skills, epileptic power supply, expensive software and hardware, and huge amount of money spent to fuel generators. Moreso, the findings of Ugwuanyi (2011) revealed that financial problems and poor ICT infrastructure are the most serious hindrances to the acquisition of ICT literacy skills as revealed by the study. Based on this, Allison (2007) recommends continue information literacy programmes, having found that



users are not aware of the information resources available in libraries or they are not familiar with how to access them.

### **GENERAL IMPACT OF ICTS ON NIGERIAN UNIVERSITY LIBRARIES:**

Nevertheless, the application of ICT has brought significant changes in Libraries leading to automated cataloguing, circulation, information retrieval, electronic document delivery, and CD-ROM databases Ugwuanyi (2011). The introduction of the internet, digitization, and the ability to access library and research materials from remote locations created dramatic changes by the twentieth century. Thus, expert systems, wireless, virtual reference services, and personal web portals have brought changes in librarianship, where digital and electronic libraries complement, and in some cases replace traditional libraries (p.23). Ayo (2001) cited in Ugwuanyi (2011) pointed out that ICT are used in libraries for database management, internet search, web management and general online service for their users. This simply shows that apart from the inroad of ICT into the traditional library operation, it has brought librarianship into a novel platform for operation (digital platform). Uchendu (2007) citing Okebukola stated that ICT can be applied in libraries for resource sharing as no single library can be all sufficient in terms of its acquisition. Internet has made simple and speedy purchase of information sources like books, journals and electronic publications, publisher's catalogues, tools like books in print, as well as forms for ordering documents are available on the internet. Rowley (1993) maintained that it is applied in libraries for record keeping and library management as well as information storage and retrieval.

The literature reviewed has shown the inherent benefits and opportunities provided by information and communication technologies (ICT) which among other things has facilitated information retrieval, storage and dissemination as well as enhanced the library operations and services. These empirical studies conducted in different public, private and university libraries in Nigeria, which were not University of Nigeria, Nsukka library, revealed the ICT availability and usage, purpose of usage, the general impact of ICT on library service and user as well as the hindrances encountered in the use of ICT facilities in Nigeria libraries. However, there are little or no literature on the availability, uses and applications of ICT in university of Nigeria, Nsukka library. It is therefore, this gap in literature that this study intended to provide through empirical research findings.

### **THEORETICAL FRAMEWORK**

This work is anchored on the global village theory and uses and gratification theory.

#### **THE GLOBAL VILLAGE THEORY**

This theory was propounded Canadian-born Marshall McLuhan in his books "the Gutenberg Galaxy: The Making of typographic Man" in 1962 and "Understanding Media" in 1964. MCLuhan described how the globe has been contracted into a village by electronic technology and the instantaneous movement of information from every quarter to every point at the same time. According to this theorist, physical distance is even less of a hindrance to the real-time communicative activities of people, and therefore social sphere are greatly expanded by the openness of the web and the ease at which people can search for online communities and interact with others who share the same interest and concerns.

The theory is found relevant in this study, because ICTs have made the world; especially higher education programmes a global village. Such that students and staff (library users) now use ICT facilities available in the universities to source for reference material, online journal as well as send and receive e-mail from within and outside the country. In other words, the boundaries between one institution and another and between institutions and the outside world have become less important. The use of Internet has revolutionized access to information for the business world, libraries, education, and individuals. Technology has also removed the barriers between school and home; such that many universities in different countries now use audio-visual devices to transmit educational materials over long distances. These new forms of globalization have replaced more conventional types of academic exchange among the world's universities.

### **USES AND GRATIFICATION THEORY**

This theory was propounded by Elihu Katz in 1970 and is concerned with how people use media for gratification of their needs. This theory, which is an outcome of Abraham Maslow's hierarchy of needs, posits that people choose what they want to see or read and the different media compete to satisfy each individual's need. When different kinds of reasoning became the focus of researchers in the 1060s and 1970, mass media audience was then assumed to be rational human being whose needs propelled them to make use of the mass media in anticipation of finding solutions to such needs.

This theory is therefore, found relevant to this study because, library users often use ICT facilities in the library to satisfy their needs such as sourcing for reference material, to complete project work, updating knowledge and lecture notes, for communication, online registration and preparation for examination among others. The library management also uses ICT facilities for cataloguing, circulation, electronic documentary, acquisition, processing, storage, retrieval and dissemination of information. The gratification which ICT has brought to library users has led to constant usage and dependence of users on the facilities.

### **METHODOLOGY**

The study adopted the survey research method. The choice of the survey was informed by the nature of the study, which entails eliciting information from respondents (population sample) with the aid of the questionnaire and interview about the subject under investigation. The copies of the questionnaire were administered with the help of a research assistant to the respondents within the library premises and the offices of staff while interview was conducted with the University librarian. Section A of the questionnaire contained the respondents' demographic data while section B contained relevant information on availability, use, and ICT services provided to staff and students by the university library.

### **POPULATION OF STUDY**

The population of study, as obtained from the academic planning unit of UNN, consisted of 30,643 library users. 6,138 staff (academic and non-academic) and 24,505 registered students (undergraduates and postgraduate) of University of Nigeria, Nsukka.

### Sample Size

The sample size of the study was 395. This sample size was statistically obtained using the Taro Yemayi's formula. Thus:

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

Where S = Sample size

N – Population

1 = Constant

e = Margin of tolerable error

$$S = \frac{30,643}{1 + 30,643(0.05)^2} = \frac{30,643}{1 + 30,643(0.0025)} = \frac{30,643}{1 + 76.6075}$$

$$= \frac{30,643}{77.6075} = 394.8458589698$$

∴ S = 395

### SAMPLING TECHNIQUE

The simple random sampling technique was used in selecting the sample. In other words, every respondent was given equal chance of being selected.

### VALIDITY OF RESEARCH INSTRUMENTS

The face and content validation of the instruments were done by two experts from department of Mass communication, University of Nigeria Nsukka who ensured that the instrument was structured in a way that yielded the necessary data needed to achieve the research objectives. Some unacceptable items were removed and some were added based on their suggestions.

### DATA PRESENTATION AND ANALYSIS

Data gathered through questionnaire were presented in frequency tables and simple percentages while the interviews were analyzed qualitatively. Out of the 395 copies of the questionnaire were distributed, only 378 were duly completed. 13 copies were not returned while 4 copies were not properly filled. The study there made use the 378 copies that were completed and returned.

### DEMOGRAPHIC DATA

**Table 1: Sex of the respondents**

Sex	Frequency	Percentage (%)
Male	176	46.6
Female	202	53.4
Total	378	100
Age Range	Frequency	Percentage (%)
17 -27	118	31.2
28 – 38	103	27.3
39 – 49	90	23.8
50 and above	67	17.7
Total	378	100



<b>Qualification</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Student	241	63.8
Staff	137	36.2
<b>Total</b>	<b>378</b>	<b>100</b>
<b>Marital status</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Single	158	41.8
Married	109	28.8
Widowed	49	12.9
Separated	32	8.6
Divorced	30	7.9
<b>Total</b>	<b>378</b>	<b>100</b>

Source: field work 2016

Table 1 above shows the respondents demography characteristics such as sex, age and status. It can be observed from the table that 176 representing 46.6% of the respondents were male while 202 representing 53.4% were female. The implication is that more female responded in filling the questionnaire than their male counterparts. Also, from the above table, 118 or 31.3% of the respondents were within the age range of 17 – 20, 103 or 27.3% were within 28 – 38 years, 90 or 23.8% were within the age range of 39 – 49 while the remaining 67 or 17.7% were within 50 years and above. In terms of qualification, majority of the respondents amounting to 63.8% (241) were students while the remaining 36.2% (137) were staff. As regards marital status of respondents, 158 representing 41.8% of the respondents are single, 109, representing 28.8% are married, 49 representing 12.9% are widowed, and 32 representing 8.6% are separated while 30 representing 7.9 are divorced.

### PSYCHOGRAPHIC DATA

**Table 2: Availability of ICT facilities in UNN library**

<b>ICT facilities available</b>	<b>Students</b>		<b>Staff</b>	
	<b>Frequency</b>	<b>(%)</b>	<b>Frequency</b>	<b>(%)</b>
The library provides adequate computers	133	9.9	98	10.0
Online Public Access Catalogue (OPAC) and Campus Network	151	13.2	109	11.2
Provision of internet services	147	12.9	120	12.3
Library subscribe to electronic database	122	10.7	80	8.2
Library provides photocopying services	80	7.0	102	10.4
Provision of laminating and scanning services	81	7.1	111	11.4
Library provides binding and printing services	108	9.5	104	10.6
Provision of virtual library for staff and students	118	10.4	101	10.3
Provision of MIS room and server for library services	143	12.5	82	8.4
Provision of ICT lab for examination	77	6.8	70	7.2
<b>Total</b>	<b>1140</b>	<b>100</b>	<b>977</b>	<b>100</b>

Source: field work 2016

Table 2 above presents the respondents' opinion on the availability of ICT facilities in UNN library. The table shows that one respondent ticked more than one options (several options) in the questionnaire which amounted to a greater number of responses than was the normal figure sampled. It can be observed that the facilities are available but some are more available than others as revealed by the responses. From the table, students indicated provision of OPAC and campus network as the highest frequency of 151 representing 13.2%, while staff indicate the provision of internet services as the highest with a frequency of 120 representing 12.3%. Both students and staff indicated the provision of ICT lab as the least with the frequency of 77 and 70 representing 6.8% and 7.2% respectively.

**Table 3: ICT facilities mostly used in UNN library**

ICT facilities mostly used	Students		Staff	
	Frequency	(%)	Frequency	(%)
Internet services	158	15.8	93	19.2
Computer hardware and software	148	14.8	61	12.6
OPAC in the library and campus network	160	16.0	77	15.9
E-books through Elsevier	60	6.1	40	8.3
Virtual library (e-library)	143	14.3	72	14.9
MIS for library services	120	12.1	50	10.3
Lamination and scanning services	40	4.1	20	4.1
Binding and printing services	78	7.8	41	8.3
Electronic database	90	9.0	30	6.2
<b>Total</b>	<b>997</b>	<b>100</b>	<b>484</b>	<b>100</b>

Source: field work 2016

Table 3 shows the ICT facilities mostly used in the library. A greater number 160 (16.0%) of students indicated the use of OPAC in the library and campus network. This was followed by internet usage with frequency of 158 representing 15.8%. Majority 93 (19.2%) of staff indicated internet usage in the library, followed by the use of virtual library (e-library) with a frequency of 72 representing 14.9%. The ICT facility that has the lowest use by both students and staff is the lamination and scanning services with frequencies of 40 and 20 representing 4.1% and 4.1% respectively. Other facilities in the library as seen in the above table are equally used by students and staff of UNN but the extent of usage is not as high as OPAC, internet and electronic library.

**Table 4: Purpose for using ICT facilities in the library**

ICT facilities mostly used	Students		Staff	
	Frequency	(%)	Frequency	(%)
For online registration of students	79	11.6	5	1.7
To source for reference materials	140	20.5	43	14.9
To complete project work	101	14.8	12	4.3
To update knowledge	65	9.5	67	23.3
For in-depth research work	138	20.2	37	12.9
Up-dating lecture notes	85	12.5	69	24.0
For communication/interaction	23	3.4	26	9.2

Browsing the web	30	4.4	8	2.8
To prepare for examination	21	3.1	20	6.9
<b>Total</b>	<b>682</b>	<b>100</b>	<b>287</b>	<b>100</b>

Source: field work 2016

Table 4 revealed reasons for using ICT facilities (especially internet, OPAC and e-library) by both students and staff of UNN. Majority of students with the highest frequency of 140 representing 20.5% use ICT facilities, especially internet and OPAC in the library to source for reference materials, while as many as 69 representing 24.0% of staff use the internet and other ICT facilities in the library to up-date knowledge. This was followed by 138 or 20.3% of students who indicated they use the facilities for in-dept research work, while 67 representing 23.3% of staff uses the facilities to up-date lecture notes. The least number 23 representing 3.4% of students used the facilities for communication/interaction while the least number 5 representing 1.7% of staff use the facilities in the library for online registration of students.

**Table 5: Benefits of ICT facilities on users and library**

Benefits of ICT usage	Students		Staff	
	Frequency	(%)	Frequency	(%)
Improvement in computer literacy of users and library staff	68	13.8	50	17.8
Improved quality research and scholarship	140	28.4	80	28.6
Improvement in teaching and learning of staff and students	121	24.5	71	25.4
Improved ICT compliance	34	6.9	29	10.4
Improved working capabilities of library staff	130	26.4	50	17.8
<b>Total</b>	<b>493</b>	<b>100</b>	<b>280</b>	<b>100</b>

Source: field work 2016

The above table 7 revealed the benefits that users of UNN library have obtained from ICT facilities in the library. Both students and staff indicated that ICT usage has led to improved quality research and scholarship with the highest frequency of 140 and 80 representing 28.4% and 28.6% respectively. This was followed by 130 representing 26.4% of students who indicated that ICT usage has improved the working capabilities of library staff, while 71 representing 25.4% of staff indicates that ICT usage has improved the teaching and learning of staff and students. The least benefit obtained from using library ICT facilities is Improved ICT compliance as indicated by 34 and 29 representing 6.9% and 10.4% of students and staff respectively.

**Table 6: Challenges encountered in using ICT facilities in the library**

Challenges	Students		Staff	
	Frequency	(%)	Frequency	(%)
Insufficient availability of ICT facilities	-	-	-	-
Irregular power supply	162	36.4	62	28.1
Outdated equipment	60	13.5	28	12.7
Uncooperative attitude of library staff	15	3.4	-	-
Inadequate training of library staff	18	4.0	-	-
Irregular cooling environment	140	31.5	60	27.1

Space constraint	-	-	-	-
Time constraint	-	-	58	26.2
Cost of using the ICT facilities	50	11.2	13	5.9
<b>Total</b>	<b>445</b>	<b>100</b>	<b>221</b>	<b>100</b>

Source: field work 2016

The above table 6 revealed the challenges encountered in using ICT facilities in UNN library. Both students and staff indicated that irregular power supply is the highest challenge encountered in using ICT facilities in the library with the highest frequencies of 162 and 62 representing 36.4% and 28.1% respectively. This was followed by irregular cooling environment as indicated by both students and staff with the frequency of 140 and 60 representing 31.5% and 27.1% respectively. The least number 15 representing 3.4% of students indicated uncooperative attitude of library staff as one of the challenges encountered while the least 13 representing 5.9% of staff indicated cost of using the ICT facilities as one of the challenges.

**Table 7: Rating of UNN library facilities**

Rating	Students		Staff	
	Frequency	(%)	Frequency	(%)
Excellent	56	23.2	39	27.7
Very Good	102	42.3	34	24.8
Good	64	26.6	41	29.9
Fair	11	4.6	24	17.6
Poor	8	3.3	-	-
<b>Total</b>	<b>241</b>	<b>100</b>	<b>137</b>	<b>100</b>

Source: field work 2016

**Table 8: Rating of UNN library services**

Rating	Students		Staff	
	Frequency	(%)	Frequency	(%)
Excellent	42	17.4	37	27.0
Very Good	97	40.2	55	40.1
Good	73	30.3	28	20.4
Fair	17	7.1	12	8.8
Poor	12	4.9	5	3.7
<b>Total</b>	<b>241</b>	<b>100</b>	<b>137</b>	<b>100</b>

Source: field work 2016

Table 7 and 8 above shows the rating of UNN library facilities and services by students and staff. Majority 102 representing 42.3% of students rated ICT facilities in the library as very Good which is the highest frequency, while majority of staff rated the facilities as Good with the highest frequency of 41 representing 29.9% of the responses. The least number 8 representing 3.3% of students rated the ICT facilities in UNN library as poor while none of the staff rated the facilities as poor. Also, a notable number of students and staff rated UNN library services very Good with the highest frequency of 97 and 55 representing 40.2% and 40.1% respectively. The least number 12 (4.9%) and 5 (3.7%) of students and staff rated the library services as poor.

## DISCUSSION OF FINDINGS

From the information gathered and analysis made, it can be observed that ICT facilities are available in UNN library, but some are more available than others as revealed by the responses. From table 2, students indicated provision of OPAC and campus network as the highest with the frequency of 151 representing 13.2%, while staff indicate the provision of internet services as the highest with a frequency of 120 representing 12.3%. Both students and staff indicated the provision of ICT lab as the least with the frequency of 77 and 70 representing 6.8% and 7.2% respectively. This finding is confirmed by Ugwuanyi (2011) which revealed that there are ICT facilities in the south-east universities studied as indicated by more than 75% of the respondents in each university. Also, personal observation and interview conducted with UNN librarian confirmed the availability of ICT facilities, though some are more available than others.

On the ICT facility that is mostly used, a greater number 160 (16.0%) of students indicated the use of OPAC in the library and campus network, followed by internet usage with frequency of 158 representing 15.8%. This affirms the study by Iwu and Yusuf (2010) and on means of locating library materials at covenant university library; the study reveals that 61.9% of the students used OPAC. Also a study by Solarin (2013) found that a notable number 182 (79.1%) of student respondents indicated the use of OPAC which is the holding of the library. Also, majority 93 (19.2%) of staff indicated internet usage in the library, followed by the use of virtual library (e-library) with a frequency of 72 representing 14.9%. The interview with UNN deputy librarian revealed that there is wireless network and ubiquitous access to internet on campus. The ICT facility that has the lowest use by both students and staff is the lamination and scanning services with frequencies of 40 and 20 representing 4.1% and 4.1% respectively. The reason could be lack of awareness or irregular need of this facility by both students and staff.

The reasons given by majority 140 (20.5%) of students for using these ICT facilities is to source for reference materials and for in-depth research as indicated by 138 or 20.3% of these students. While as many as 69 representing 24.0% of staff indicated they use the internet and other ICT facilities in the library to up-date knowledge and lecture notes as indicated by 67 representing 23.3% of the staff. This finding corroborates Krubu and Asowaru (2010) study which found that the major reason attached to the use of ICT resources was for information storage and retrieval and that the ICT resources mostly used are CD-ROM, online database, World Wide Web and the Internet. The least number 23 representing 3.4% of students used the facilities for communication/interaction while the least number 5 representing 1.7% of staff use the facilities in the library for online registration of students. This finding contrasts with that of Solarin (2013) which found that the least number, 15 representing (35%) of the faculty respondents use the internet to complete project while the least number 100 representing (43.5%) of the students respondents use the internet for leisure/recreation.

Also, on the benefits that users of UNN library obtain from ICT facilities in the library, both students and staff indicated that ICT usage has led to improved quality research and scholarship with the highest frequency of 140 and 80 representing 28.4% and 28.6% respectively. This was followed by improvement the working capabilities of library staff as well as improved teaching and learning of staff and students as the responses of both students (130 or 26.4%) and staff (71 or 25.4%) have shown. The least benefit obtained from using library ICT facilities is Improved ICT compliance as indicated by 34 and 29 representing 6.9% and 10.4% of students and staff respectively. The reason could be because users have to be ICT compliant before they can use the facilities. This is confirmed by Ilo and Ifijeh (2010), study that 94% of



final year students at Covenant University indicated that the internet had greater impact on their projects. Also, Krubu and Asowaru (2010) study confirmed this finding when it revealed that ICT has an enormous impact on Nigeria libraries and their users based on its effectiveness.

Apart from the benefits offered by these ICT facilities, respondents revealed the challenges encountered in using ICT facilities in UNN library. Both students and staff indicated that irregular power supply is the highest challenge encountered in using ICT facilities in the library with the highest frequency of 162 and 62 representing 36.4% and 28.1% respectively. This was followed by irregular cooling environment as indicated by both students and staff with the frequency of 140 and 60 representing 31.5% and 27.1% respectively. The least number 15 representing 3.4% of students indicated uncooperative attitude of library staff as one of the challenges encountered while the least 13 representing 5.9% of staff indicated cost of using the ICT facilities as one of the challenges. One major challenge pointed out by the deputy university librarian in an interview is the high cost of acquiring ICT facilities with which to equip the library.

Furthermore, findings on the rating of UNN library facilities showed that majority of staff (41 or 29.9%) rated UNN library facilities as Good while majority of student (102 or 42.3%) rated the facilities as Very Good. Also, a notable number of students and staff rated UNN library services Very Good with the highest frequency of 97 and 55 representing 40.2% and 40.1% respectively. The implication is that the services in UNN library are commendable but more has to be done to improve on the facilities used by staff and students, especially in this era of technological innovation.

## **CONCLUSION**

It can be observed that ICT has brought remarkable development in Nigerian university libraries, by helping to bridge the gap in information and knowledge and improving the working capabilities of library staff. It has led to the fast acquisition, processing, storage, retrieval and dissemination operations by users, because many library activities are now ICT based. There is now a tremendous increase in the use of ICT facilities, especially the internet which has added values to the services provided by Nigerian libraries.

Despite the opportunities provided by ICT, most Nigerian libraries are not fully automated and where they are automated, the availability of ICT facilities is not adequate to facilitate individual and community development. Also, the effective usage and functioning of the available ICT facilities in any Nigerian library is largely dependent on power source which have proven to be the major challenge in harnessing the ICT opportunities. It therefore, when existing Nigerian libraries are fully equipped with ICT facilities, taking into consideration factors that can hinder its effectiveness, that the opportunities provided by ICT can be fully harnessed.

## **RECOMMENDATIONS**

The based on the findings, the following g recommendations were made:

1. There should be constant acquisition and provision of ICT facilities by the university management with which to equip Nigerian university libraries, especially university of Nigeria, Nsukka. Library management software (such as Electronic Resource Management -ERMS) should be acquired and installed for efficient and effective library services. This is because, without proper automation of Nigerian university libraries the global technological and information advancement could hardly be attained. Majority of the higher institutions in Nigeria,

even those with good Internet connectivity, are still at a low level of the integration of ICT in teaching, learning, research, library, information and managerial services. There is a need for professional development in the integration of information technology into education and learning.

2. Library users (staff and students) should be constantly sensitized on the availability of ICT facilities and their benefits, and be encouraged to use them for their personal development and library services.

3. The findings show that irregular power supply and irregular cooling environment are the highest challenges encountered in using ICT facilities. Hence, there should be provision of constant power supply in UNN library and other university libraries (by government and university management) which will enhance the effective use of the ICT facilities. Also the ICT facilities depend on power for effective functioning. This is the only way through which the effective usage of ICT in Nigerian libraries can be guaranteed.

4. Government, NUC, NGOs and other stakeholders should be collaboratively involved in promoting ICT literacy skills, especially in universities through fund provision, sponsorship, ICT training programme and personal development efforts.

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