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An Investigation of the Inclusion of Information and Communication Technologies in the Management of University Libraries

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Abstract

The advances in information and communication technologies (ICTs) and the astronomical growth of information have brought about a tremendous transformation in the ways libraries of every sort are being managed as well as the ways services are rendered to users. This study therefore investigated the inclusion of ICTs in the management of university libraries in Nigeria with Alex Ekwueme Federal University, Ikwo, Nigeria as a case in point. The study applied a descriptive survey design with a population sample of 45 library staff selected through purposive sampling method and was guided by five research questions. The main instruments used to obtain data for the study was a four-point Likert scale design structured questionnaire which was validated by three experts one from the Department of Library and Information Science and two from the Department of Computer Science from two universities in Nigeria. While the reliability of the instrument was established through conducting a two week pilot study at the University of Nigeria Nsukka Library.. The result of the pilot study was used to determine the reliability coefficient of the questionnaire which stood at 0.81. Data collected were analyzed using frequency, percentage and charts while at 0.05 level of significance, Pearson Product Moment Correlation Coefficient analysis was used to test the only null hypothesis. The outcome of the study shows that the emergence of information and communication technologies (ICTs) have brought an undeniable transformation in library operations and the ways services are provided to users and other stakeholders and that the inclusion of ICT facilities in the management of the library has tremendous positive effect in the management of the library. The study recommended among other things that, a policy should be put in place by National Universities Commission mandating all universities to have their libraries automated within a specific period of time as to allowing for collective resource sharing and proper networking among university libraries..

Keywords: Information and communication technologies, University library, Management, Information Resources, Library Management system, Librarians

1.0.   Introduction

The advances in information and communication technologies (ICTs) and the astronomical growth of information which are mainly in digitalized formats have brought about a tremendous transformation in the very ways libraries of every sort are being managed as well as the ways services are rendered to users. To this end, there has been a paradigm shift in the ways information materials are acquired, processed, stored, preserved and disseminated to intended users. Stating the obvious, information and Communication Technology (ICT) has indeed made significant impact in every human endeavour. The impact has been rather prominent in areas of service activities such as banking, health, transportation, education and libraries. Chauhan (2004) posited that the benefits of use of ICT in services can be broadly explained in terms of economy, ease, extension (or expansion) and efficiency. Devchoudhary (2007) also observed that ICT has influenced the traditional library services; bringing out fundamental changes in the process of acquiring, processing, storing, retrieving and information delivery.

The term, Information and Communication Technology (ICT) as it relates to library noted DeWatteville and Gilbert (2000), is the acquisition, analysis, manipulation, storage and distribution of information and the design and provision of equipment and software for these purposes. Oketunji (2002) defines ICT as computers and other technologies that are used in the acquisition; organisation, storage, retrieval and disseminating of information in libraries. Mayer (2006) added that ICT in libraries is a term that covers the acquisition, processing, storage and dissemination of information in textual, numerical, pictorial and audio-visual formats. He further stated that the term is restricted to systems dependent on microelectronics; that is the technology and techniques involved in the design, development and construction of extremely small electronic circuits such as computer on a single silicon chip. Similarly, Daniel (2010) sees ICT as forms of technology that are used to create, store, transmit, share or exchange information. This broad definition of ICT includes such technologies as: radio, television, video, Digital Versatile Disk (DVD), telephone (both fixed line and mobile phones), satellite systems, computer and network hardware, software and the Internet, as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail. These different tools are able to work together to form our networked world. UNESCO (2000) posited that the inception of ICT in libraries which is the utilization of all the technologies that enable the handling of

information, facilitate different forms of communication between man and electronic systems, widened the scope of librarianship and put new roles on librarians, changed the curriculum of library schools, training now includes use of information technologies in work places thus improving their skill, efficiency and status as information workers and enable them to fulfill their roles as provider of knowledge. Ogunsola and Abayade (2005) added that librarians have begun to adopt new designations to reflect their new roles i.e. information scientists, system librarians, digital librarians and information managers etc. Kaling and Gautam (2008) observed that the common theme behind ICT application in the library is to enhance library functions and make service delivery such as acquisition, organisation, storage, retrieval, dissemination and maintenance of information resources more effective.

The library on her part is the nerve centre of academic activities in universities. It is a depository of knowledge with varied and useful information in numerous formats. Like every other library, the core functions of university libraries are; acquisition, cataloguing, circulation, serial control, interlibrary loan and management and delivery of information in both traditional and electronic format. They assist in achieving the goals and objectives of their parent institutions through the provision of current and relevant information resources that are necessary for sustaining the learning, teaching, research, other functions and activities within the institutions (Onwubiko, 2020). In line with this, Vickus and Metsar (2004) posit that the library is a place where different social policies, theories and ideologies are met and a space to study different arts and cultures provided. In order to achieve these, the library acquires and manages resources which include material and human resources. If one therefore has to consider the place of library and all the accrued benefits of ICTs, the deduction is that the inclusion of ICTs in the management of university libraries is a solution to the morass of manual management of libraries in this digital era that have seen most information materials available digitally. It is against this backdrop that this study was deemed necessary as to investigate the impact of the inclusion of ICTs in the management of university libraries.

1.1. Statement of the Problem

In an era in which information is growing in a astronomicall proportion and has given rise to digitalization of information resources the university library is said to be the best for it as the

information nerve centre of an institution whose basic role is teaching/learning and researching among other functions. As noted by Gbaje and Okojie, (2010), the deregulation of the telecommunication industries has made ICT accessible and available in many libraries especially the academic libraries which have resorted to using ICT in the management of their resources, the degree of which is yet to be established. The advent of ICTs therefore has given librarians a face lift in the organisation and management of information in libraries. Digital media have revolutionized information sources and advances in ICT have dramatically changed information provision and as revealed by experts the process of collection management has become very challenging and complex. The essence of inclusion of ICT facilities in the management of any library is therefore to improve the face of information acquisition, processing, dissemination, storage and also facilitate electronic networking, creation and accessing of remote electronic databases, putting at the disposal of libraries and library users a wide range of information services and products. According to Singh (2004), acquisition, processing, organisation, storage, preservation, relegation and withdrawal of library resources will continue to evolve with new ICT products and services. To the best of the knowledge of the researcher, a good number of university libraries in Nigeria have not adapted these technologies in the management of their libraries living one guessing as whether it is as a result of not having the right information resources for their users; that the type of ICT facilities available for the management of library information resources are not adequate, that library operations and routines ICT facilities applied in the management of information resources in the university libraries are inadequate, that the extent of ICT facilities utilization has not affected the management of information resources in university libraries, that staff ICT competences has affected the management of library information resources in the Nigerian university libraries or that the Nigerian university libraries have not overcome the challenges of ICT facilities utilization to the management of library information resources.

It is to provide answers to the above puzzles that this study was embarked upon as to investigate whether the inclusion of ICTs in the management of university libraries in Nigeria has not had any positive impact in the effective management and dissemination of information resources to their patrons using Alex Ekwueme Federal University, Ikwo, Nigeria as a case in point.

1.2. Research Objectives

The main objective of this study was to investigate the impact of the inclusion of ICTs in the management of university libraries. Other objectives include:

i. To establish the types of ICTs facilities that are available and being used in the management of university library;

ii. To determine library operations and routines were ICTs are applied in the management of the university library;

iii. To determine the extent the use of ICTs facilities have affected the management of the university library,

iv. To ascertain how staff ICTs competences have affected the management of the library and,

v. To identify the challenges militating against the effective utilization of ICT facilities in the management of the university library.

1.3 Research Questions

This study was guided by the following five research questions:

i. What type of ICT facilities are available and are being used for the management of library?

ii. Which library operations and routines are ICT facilities applied for the management of library?

iii. To what extent have the ICT facilities utilization affected the management of the library?

iv. How have the staff ICT competences affected the management of the library?

v. What are the challenges militating against the utilization of ICT facilities in the management of the library?

1.4 Hypotheses

The study was further guided by one formulated and tested null hypothesis.

i.   Ho1. The use of ICT facilities in the university library has no statistical significant effect on the management of the library.

2.0.   Literature Review

2.1. Conceptual Framework

2.1.1. Concept of library management

Management is that field of human behaviour in which managers plan, organize, staff, direct, and control human and financial resources in an organisation in order to achieve the desired individual and group objectives with optimum efficiency and effectiveness, (Subedi, 2007). Management has been defined as the process of getting things done through and with people. It is the planning and directing of efforts and the organizing and employing resources (both human and material) to accomplish some predetermined objectives. For the purpose of this study, management is the use of people, technology and resources to achieve the set goals and objectives of a library.

Robbins and David (2004) looked at management as it relates to libraries as the ability of a librarian to manipulate library staff, users and material resources in order to achieve its organisational goals and objectives. It is also the act to exploiting the resources of a library efficiently in cost-effective ways to facilitate efficiency in decision making through planning of what to select and acquire. Management of library resources includes organizing orientation, staff training, workshop and seminar for staff and patrons and making sure that the information resources shelved for users are easily accessible as well as leading other library staff in the management of information resources, controlling the library staff to see that they perform their duties and ensure that users are obliged to obey rules and regulations governing the library. Management in libraries also involves recruitment of new staff and developing the old ones. It also entails reporting what the library has achieved quarterly, biannually or annually to the management and preparing annual budget on the type of information resources the departments need based on requests made by users or funds available to the library, what they will need to meet the demand of the users and other administrative duties (Robbins, & David, 2004). Ekoja (2010) summarized library management as working with and through people using material and other resources to achieve set goals, in other words, management is the synchronization of

people and resources to achieve organisational goals. Management thus involves planning (deciding on future activities and putting in place plans for action); organisation (implementation of plans by making maximal use of required resources to achieve them); staffing (job analysis, recruitment and hiring of the appropriate staff to discharge the appropriate functions); leading/directing (determining what needs to be done in work situations and getting the people to do them); controlling/monitoring (checking progress against plans); and motivation (providing incentive to get the personnel to work effectively and efficiently). The implication of the statement above is that no individual can work alone to achieve the organisational goals and objectives without working with other staff in the library to effectively manage the resources to meet the user's need. On the other hand, library management system as defined by Onwubiko (2021) is software for managing manual functions of a library. The software helps to manage the entire library operations from maintaining book records to issuing a book. In addition, it allows streamlined management of fine details of books such as author name, edition, and many other important details. So, it is easier to search for books and find the right materials for students and the librarian.

University library has to manage its resources for effective service delivery to its patrons. Iya *et al*. (2005) asserted that the basic tasks in managing library resources include acquisitions, processing, storing, maintenance, preservation, loaning and general administration. Other management issues include the planning of the construction of new libraries or extensions to existing ones and the development and implementation of outreach services and reading-enhancement services. Akintunde (2006) noted that having resources in the library is one thing and managing them for effective service delivery is another. Most of the libraries are managing their resources manually which takes time and energy. Faboyinde (2006) pointed out that this can be done in a short period of time through the use of internet, computers and other ICTs facilities.

2.1.2. Information and Communication Technology

Information and Communication Technology (ICT) according to Chauhan and Murphy (2004) comprises two strong technologies, one is *information technology* which usually deals with the hardware and software elements that allow us to access, store, organize, and manipulate the

information by electronic means, and the other is *communication technology,* which deals with the equipment, infrastructure and software through which information can be received, accessed and disseminated, for example, phones, faxes, modems, networks, etc. Today, we all are dealing with information and it is the strength of each nation, new status of any nation can be determined by its information resources rather than economic resources. All professions the librarianship inclusive, are dominated by ICT and now we can hear about e-governance, e-banking, e-learning, e-business, e-education, e-publishing, e-documents, e-journals, etc.

The ICT as the synergy between computers and communication devices is a composite term, which embodies three important concepts, i.e. information, communication and technology. Information means many things to many people, depending on the context. According to deWatteville and Gilbert (2000), information is any potentially useful fact, quantity or value that can be expressed uniquely with exactness. Womboh and Abba (2008) noted that information is processed data that aids decision making. It could also be visualized as a commodity that could be bought or sold. In this study, information is anything that we come in contact with directly or indirectly that adds to our knowledge and is capable of causing a human mind to change its opinion about the current state of the real world, and in a library, information is data that have been processed into form that is meaningful to the recipient/user and is of real or perceived value in current and future decision.

Communication refers to the transfer or exchange of information from person to person or from one place to another. When action produces a reaction, whether positive or negative, communication has taken place Kindersley (2003) noted that communication is the process of sharing our ideas, thoughts, and feelings understood by the people we are talking with. It is also an act of impacting news to the science and practice of transmitting information. Sanchez (2004) observed that communication is transfer of information, ideas, thoughts and messages that involves a sender, a receiver, a code and, a language that is understood by both the sender and the receiver. There must be a sender to transmit the message, and receiver to make appropriate decisions on how the rest of the exchange should continue (James, 2004). Womboh and Abba (2008) posited that it is a process involving the passing of messages through the use of symbols which all parties in the communication understand. It involves the exchange of ideas, facts, opinions, attitudes and beliefs among people. It is not a one-way affair. Communication is the

activity of conveying meaningful information. Communication requires a sender, a message, massager and an intended recipient, even though the receiver may not be present or aware of the sender's intent to communicate at the time of communication. Thus it can occur across vast distances in time and space. It requires that the communicating parties share an area of communicative commonality. In the context of this work, communication is the process of information exchange between the user and the librarian. Technology refers to the use of scientific knowledge to invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort. In this regard, technology refers to things like the computer, telephone, cell phone, GSM handsets, television, radio, etc. Thus, ICT includes: Computer, Internet, Digital camera, Webcam, Smart Card, Scanner, E-Books, Printers, Electronic Journals, WEB-OPAC, Animation, E-Mail, CD-ROM, DVD, RFID Technologies that enhance the acquisition, analysis, manipulation, storage and distribution of information; and the design and provision of equipment and software in the library (deWatteville and Gilbert, 2000)

2.2. Theoretical framework

In the view of Okiy (1998), the current trend in information provision in libraries worldwide is through the application of information technologies for the provision and expansion of scope of information available to patrons irrespective of their location. This he noted has the added advantage of effectiveness and efficiency in services provided. The ICT revolution therefore is sweeping through the world and the gale has even caught up with libraries. Aina (2003) posits, there is now a paradigm shift among libraries all over the world from the traditional ownership of information materials systems to that of access to electronic information regardless of its location. In view of the above, libraries which traditionally are information processors and disseminators are said to be in the best position to provide the best of services to their clientele with these new technologies. Considering the central place of computers to information flow in the world today; the use of ICT to facilitate research becomes indispensible (Onwubiko, 2021). ICT basically, is the use of computers and telecommunications for the processing and distributing of information in digital, video and other forms. (Morris 1992).

As noted, among the ICT facilities in use in the library include; computers, DVDs, CDs, internet and telephones, digital camera, webcam, smart card, scanner, e-books, printers, e-Journals, WEB-OPAC, animation, e-mail, CD-ROM, and RFID Technologies (DeWatteville and Gilbert,

2000 & Nwalo, 2005) Ogunsola, (2004) cited in Abdulwahab et al.(2011) revealed that several systems have been developed for libraries, various house-keeping chores and more still are being designed and refined due to the technology of large-scale integration which facilitated library automation. Voigt, (2012) reveals that Automation is used in a broader sense to describe non-continuous operations consisting of a series of smaller jobs which are performed in sequence without human control. Automation is used loosely in a third sense as the technological development involving computer machines which are capable of performing simple and complex mathematical operations on information, usually in binary form, which the machine can record and store he added. Library automation may be defined as the application of automatic and semi-automatic data processing machines (computers) to perform traditional library house-keeping activities such as acquisition, circulation, cataloguing and reference and serials control (Onwubiko, 2021). As explained by Uddin (2009), today library automation is by far the most commonly used terms to describe the mechanization of library activities using the computer. Sharma (2007) sees library automation as the use of computers, associated peripheral media such as magnetic tapes, disks, optical media etc and utilization of computer based products and services in the performance of all types of library functions and operations. As highlighted by Moorthy (2004) many activities in a library are routine in nature and repetitive and have them automated will help in managing the library's resources in a better way at the same time saving time, money and manpower.

Despite the gain associated with the use of ICTs in the management of university libraries, Gbaje (2007) did observe in his study that not all the university libraries in Nigeria provide ICT facilities for their patrons. An outcome that contravene the views of Okore & Ekere (2008) that the availability of ICT facilities and the awareness of them by the patrons will go a long way for academic librarian to be relevant to their patrons and be up to date so that they can manage the ever-growing information needs in this electronic age. According to Adeniji, Adeniji & Oguniyi (2011) most libraries in Nigeria only use computers, printers, scanners, and Internet for their services. However, it was observed that none of the libraries had CD-ROM Technology and Fax Machine in their domain. Ogunsola (2004) reveals that majority of higher institutions in Nigeria; even those with good Internet connectivity are still at a low level of integration of ICT in teaching, learning, research, library services, information and managerial services. Ekong

(2005) pointed out, however, that in some of the first generation university libraries (University of Benin Library, Benin, Kashim Ibrahim Library (ABU), Zaria, University of Nigeria Nsukka Library, Nsukka, and a few others), digitalization is in place and library information networks are established with connectivity through the university campus network to the Internet. The Centre for Learning Resources (CLR) Covenant University, Ota, has been placed on the platform of full application of ICT because funds are made available for such innovations. Ogunsola (2004) explained that some Nigerian university campuses are now jam-packed with IT facilities. It is no longer strange to see lecturers and students doing their research and other academic works using various ICT devices like e-mail and the Internet. Students can absorb more information and take less time to do so with the use of ICT he declared. University libraries therefore can be transformed into a new information services unit, providing electronic cataloguing, OPAC, electronic acquisition/serials control, electronic inter-library loan and calculation functions (Ogunsola, 2004).

Stating the obvious, ICT facilities are being applied on so many library operations and routines. In this vain, Nwalo, (2005) opines that Libraries in the third world including Nigeria are gradually but steadily converting from manual to computerized routines as the benefit of the automated or uses of ICT in a library system are both self evident and overwhelming. These library operations and routines activities the librarians do on daily basis include; selection, ordering, cataloguing and classification of information resources etc. Also Okolo (2002) opines that in this age of information explosion, the library needs ICT in order to give efficient services to its users. Not only is the speed of its operation high, the volume of its output is correspondingly large and when used in the library, there is economy of labour and operating cost. In short, its application in the activities of the libraries will enhance their information delivery and the overall performance of the library services.

On the use of ICTs as communication tools, Kaling and Gautan (2008) in their study on the application of ICT in academic libraries in Arunachal Pradesh found that telephone and online interaction were the major source of communication between the resource development librarian and the staff of the institution. Another study on the state of ICTs in tertiary institutions in Nigeria by Akintunde (2006) revealed that the social media like face book, twitter, blog flickers

were used to reach out to department and faculty library board on issues of selection of library resources before the acquisition proper. Tinio (2002) noted that through the use of computer network, internet to interact with the information resource vendors, book sellers and publishers, the resources development librarian can use their website for comparison and quotation of what the library wants to acquire. Mosuro (2000) noted that this will enable the librarian to determine what the actual demand is. Information on borrowing can also be compared with the current stock to ascertain which books are hardly used. Computer is used to check the users' statistics.

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In an automated catalogue library, patrons use keywords to search for resources and their various locations in the library. With the Internet, it is possible to search for catalogues of other libraries remotely. This is far better than the manual system of surfing through card catalogues of materials only within a library (.Barton & Waters, 2004). From the users' point of view the cataloguing module of the automated system is the most powerful and useful part of the library. As the advantages are multifarious which include sophisticated searching of the library stock, link to the circulation control system so that not only can a borrower ascertain that the library holds a particular item but can also see its loan status at the time, that if an information resource is loaned out, the user will know when it is to be returned and be able to put a hold on it, he search facility is very flexible, allows searching for items such as author, title, accession number as well as class mark/call number and its greatest power for users being the search on subject keyword or word in title.(Adebisi, 2009)

Ezeani (2010) writes on customer services using ICT and states that borrowers can carry out self-issue over the Internet in certain libraries. He explained that an automated system checks the status of the borrower to ascertain if lending limits have been reached. The borrower automatically is made to see which other items they have on loan. If a requested book is damaged and is out of circulation, this is often revealed by the computer and the patrons are further provided the opportunity to reserve the desired item on line. Data provided by the circulation control module of the automated management system can make a significant contribution to the successful management of stock he added. According to Reed-Scott (2000), libraries currently face the intellectual problems of determining what should be preserved and what should deteriorate and on this Njeze (2012) found out in his study that the most common

storage device is flash drive (29%); database 31%, library software 31%, computer hard-drive 31%, and tape recorder57%.

In respect of usability ICT facilities in university libraries, studies did show that 33% of the respondents use ICT facilities for web browsing, 21%, 17% and 13% of the respondents used the ICT facilities for class assignment, career advancement, and project writing, respectively while 8% of them use the ICT resources for scholarship purposes and charting with colleagues (Adeniji*, Adeniji and Oguniyi* 2011; Ani *et al* ,2007 & Edoka and Anunobi, 2010). Generally the above studies reveal that the studied university libraries were using ICT facilities for library preservation especially serials and public services function, acquisition and processing functions,, Photocopiers for their serials duplication, personal computers and CD-ROMs,. Printers, diskettes, LAN and OPAC the Internet; and scanner, fax machine, CD writer and CD ROM at a very low level. While all the libraries were found not using e-mail and WAN facilities in their library functions. It was discovered that only personal computers and photocopiers were the ICT facilities being used by the staff of the studied university libraries.

In their study on information technology facilities and applications in some Nigerian research and university libraries; Idowu and Mabawonku (1999) found that 92.3% of the thirteen (13) federal universities studied were using the TINLIB software for their automation projects, while 15.4% of the universities were using CDS/ISIS. Akintunde (2004) pointed out that the library used ICT in management of library administration, processing of library materials, developing online resources, accessing online resources, developing offline resources, accessing offline resources and providing service to clients. Igben and Akobo (2007) studied the state of Information and Communication Technology (ICT) in libraries in Rivers State, Nigeria. and discovered that 75% of the libraries studied used computers for the operations of their libraries To determine the level of ICT usage for the management of library resources in Nigerian federal universities, especially the cataloguing of the library information resources through the use of automated software, Imo and Igbo (2011) in their study on the challenges of software use in Nigerian university libraries found out that more than 75% of the university libraries surveyed have used more than one software in their automation projects. These university libraries mostly migrated from TINLIB (The Information Navigator Library) management software to other

software regimes. The survey also showed that these libraries had made use of seven types of software, namely TINLIB, GLAS, Alice for Windows, Lib+ (X-Lib), Virtua, E-Lib. SLAM and CD-ISIS. This indicates that apart from TINLIB software which was introduced to these university libraries by the National Universities Commission (NUC), there is no attempt by these libraries to adopt a common software platform. Furthermore, Krubu and Osawaru (2011) inferred in their study that the impacts of new technologies are felt by libraries in every aspect. Computing technology, communication technology and mass storage technology are some of the areas of continuous development that reshape the way that libraries access, retrieve, store, manipulate and disseminate information to users.

Studies have shown that competence of staff can make or mar the optimal utilization of ICTs in the management of any university library. As revealed, majority of librarians are trained in the traditional methods of librarianship. In view of this, Morgan (1998) argued thus: in today's world, why would anybody trust a librarian whose profession is about information and knowledge, who had not mastered a computer? This argument explains why librarians must acquire computer knowledge to be committed to providing ICT-based services. Librarians have found themselves in a new environment, otherwise known as digital environment. The environment is characterized with uncertainties and increasing complexities of digital technology (Nwakama, 2003). Librarians need ICT skills for a number of reasons. The new working environment has become a competitive one and many players are now involved in information provision which include, Internet cafe, mobile communication media, ICT staff, and many others in the information profession (Wittmer, 2001). Some of these players especially the internet café providers lack the necessary IT skills to obtain quality information (Stubbings and McNab, 2001). Librarians will be called upon to act as both educators and intermediaries (Sharp, 2002). New services are emerging in the new working environment. Published works in this area revealed these trends; too much emphasis has been placed on the development of ICT infrastructure in developing countries, and not enough considerations have been given to human resource development (Lim, 1999; Jensen, 2002; Magara, 2002). Aschroft and Watts (2005) observed that in Africa, one in a hundred people has access to a Personal Computer. They added that there is a significant skills gap among information professionals in Nigeria, which has resulted in serious under utilization of electronic resources in many libraries in Nigeria. Ramzan

(2004) noted that the application of ICT to library processes will help librarians develop appropriate ICT skills. Librarians therefore are expected to possess these ICT knowledge and skills: operating system, packages and programming languages, web awareness, technical skills and knowledge of online services. Warmwin (1998) states that as computers have assumed such a central role in our profession over the years, we need to know more about them. It is therefore imperative for librarians to have technical skills and subject knowledge so as to add value to library services for user. Morgan (1998) considered other skills such as elementary programming of one or two languages, project management, and change management charge. Islam and Islam (2007) also observed that librarians must develop the competencies to carry out effective searches on CD-ROMs, OPAC, on the web and other electronic databases. Pairy (2007) outlined the ICT kills of librarians as database management, web development, management of multiple media, metadata skills, knowledge of standards such as Z39.50 and Dublin Core. Levine (2007) listed some of the ICT skills to include but not limited to word processing skills, spread sheet skills, database skills, electronic presentation skills, web navigation skills, website design skills, e-mail, management skills, Windows Explorer skills, etc which will enable the library staff to manage the resources. Nyamboga (2007) enumerated the ICT skills among librarians as operating systems, packages and programming languages, knowledge of library automation software, web awareness, knowledge of online facilities/services, technical services, and managerial skills. The use of training tools has been found to be effective in training library academic staff.

It has also been discovered that there are many challenges militating against the optimal utilization of ICTs in the management of university library. In their study on the challenges of managing information and communication technologies for education in Tanzania observed that. As noted while new technologies have added value to library services by presenting new modes of collecting, storing, retrieving and providing information, they have also brought new challenges and aggravated some of the challenges that had faced libraries before. The challenges relate to acquisition of ICTs, preservation of electronic information resources, maintenance and security issues, training of users, and general lack of awareness and commitment among library stakeholders (Emmanuel & Alfred,2008). Walmiki and Ramakrishnegowda (2009) studied ICT infrastructure in university libraries of Karnataka and found that most of the libraries lacked

sufficient hardware, software facilities and do not have adequate internet nodes and bandwidth. The campus LANs were not fully extended to exploit the benefits of digital information environment. Sivakumaren, Geetha & Jeyaprakash (2011) in their study on ICT facilities in university libraries in India found that computers, printers, scanners and photocopiers were most of the facilities used and the application of ICTs has increased the library functions and users' expectations have increased due to development in technologies. Jordan (2003) was of the opinion that barriers to adequate ICT skills training in developing countries arose from both lack of ICT literacy and the fact that many local library schools failure to integrate ICTs into their curricular has greatly affected the performance of library staff. Other barriers or constraints as enumerated by Ashcroft and Watts (2005) include shortage of technology literate staff in libraries, the lack of skilled human resources to install and manage computer networks, and poor funding to develop ICT skills in existing staff.

Adeleke and Olorunsola (2010) studied ICT and library operations and found that ICT facilities were the major constraints facing libraries in the use of tools. Shafi-Ullah and Roberts (2010) found that ICT infrastructure is necessary to provide a research culture in higher education institutions and recommended allocating funds for ICT infrastructure. Etebu (2010) studied ICT availability and found that the situation is not encouraging. Adeniji, Adeeniji and Ogunbiyi (2011) added that there are several problems militating against the respondents using the ICT facilities in their various campuses in Nigerian universities, such factors include power outage, the high cost of connectivity, lack of ICT skills, interconnectivity problem and obsolete equipment. Most of these challenges are to be overcome by both the library management and information providers before they can satisfy the information needs of their numerous users on daily basis. This finding correlates with Missen *et al* (2007) as cited by Okon (2007). Imo and Igbo (2011) noted in their study that most Nigerian universities changed software averagely within five years of use. This length of time does not show evidence of adequate experimentation with the software. The reasons given ranged from inadequate technical support for the software lack of proper feasibility studies deficiencies discovered to high cost of maintenance, Inadequate technical support and lack of proper feasibility studies are two technical areas which need to be properly taken care of if software use in Nigeria university libraries is to be meaningful.

Martel (2003) argued that because technology changes often, roles are grabbed on the fly noting that experts in one piece of software with its related slice of the information world might be obsolete with the release of a new piece of software with a new slice of the world. Inadequate knowledge of this among software users might lead to users subscribing to software with obsolete technology. This he reveals may lead to lack of maintenance support spearheaded by lack of proper planning and evaluation of software before acquisition and Zaid (2008) see these as great challenge in managing library software.

Afolabi and Ogunbiyi (2011) highlighted some of the challenges encountered in the library in ICT application to include: lack of adequate finance and cost of ICT facilities, shortage of manpower and low level of ICT compliance: power outage: occasional system failure/ poor maintenance of ICT equipment: Staff attitude towards ICT utilization/technophobia: Several studies, according to Ezeani (2000) have showed that older librarians find it difficult to use some of these newer technologies. Inadequate training and technical/skilled manpower: Frequent change in technology which might lead to total overhauling of the existing system and Lack of ICT policies/ inability of the government to monitor effectively the policy on information technology:

3.0. Methodology

3.1 Research Design

The survey research method was adopted for the study. This is because of the numerous advantages attributed to it by statisticians and professionals such as Busha and Harter (1980), Aina and Ajiferuke (2002). They observed that survey method/design could be conveniently used in the study of large and small populations without sacrificing efficiency in addition to time and money and accuracy.

3.2 Population of the Study

The targeted population for the study was all federal university libraries in Nigeria. Due to certain factors which include distance, the study population was limited to Alex Ekwueme Fedderal University, Ikwo, Nigeria library which is a microcosm of the macrocosm called federal university libraries on the ground that they all share the same characteristics needed for

the study. However, the subjects of the study were the staff that manages the information in the library. They include; Acquisitions and Collection Development Unit, Cataloguing and Classification Unit, Reference Services Unit Circulation Unit and Information, Communication Technology Division, Serial Management Unit and the University Librarian. The choice of the library staff in these divisions was informed by their being involved in the management

3.3. Sample and Sampling Techniques

All the 45 members of staff of the university library were used for this study. This is due to the fact that the population of the study is not too large; thereby allowing the researcher to provide treatment to each of the staff. Purposive sampling technique was used for this study because every member of the population was needed to form the sample.

3.4. Instruments for Data Collection

The research instruments used are questionnaire and observation. The questionnaire was designed essentially for collection of data on the application of Information and Communication Technologies to the management of university library. . The questionnaire collected data that provide answers to the research questions and hypothesis raised in the study. The questionnaire contained five (5) sections: Section A gave an insight on the type of ICT facilities available and being used for the management of the library B looked at the library operations and routines ICT facilities are applied for the management of library information resources; Section C ascertain the extent to which ICT facilities utilization have affected the management of library information resources; Section D looked at staff ICT competences in the management of library information resources; Section E looked at the challenges in the utilization of ICT facilities in the management of library.. The observation method was used to fill the information gap that the questionnaire did not give, especially from the University Librarian.

3.5. Validity and Reliability of the Instrument

In order to ensure that the questionnaire was capable of eliciting the required data and information used for this study, it was validated by three experts one from the Department of Library and Information Science, Abia State University, Uturu, Nigeria and two from the Department of computer Science, Alex Ekwueme Federal University Ikwo, Nigeria. Corrections,

vetting and suggestions by the aforementioned were incorporated in the final copy before administering it. The reliability of the instrument was established by conducting a pilot study within two weeks at the University of Nigeria Nsukka Library. The result of the pilot study was used to determine the reliability coefficient of the questionnaire which stood at 0.81.

3.6. Methods for Data Analysis

The data collected for this research were presented and analyzed using descriptive and inferential statistics in order to obtain relevant answers to the research questions formulated and also test the hypothesis respectively. In this regard, frequency distribution tables, simple percentages, charts were used to present and analyze data collected while the hypothesis at 0.05 level of significance, was tested using Pearson Product Moment Correlation Coefficient was used to test.

4. 0. Presentation and Analysis of Data

Data collected and presented in this section, took the turn of the research objectives and questions

Table 1: Type of ICT facilities available for the management of the university library

Items	SA		A		DA		SDA	
	F	%	F	%	F	%	F	%
Computers	45	100	*	*	*	*	*	*
scanners	18	40	*	*	14	31.11	13	28.89
VCD	30	66.67	*	*	3	6.67	12	26,66
CD-rom	39	86.67	*	*	*	*	6	13.33
Barcode readers	*	*	*	*	*	*	45	100
Internet facilities	31	68.89	5	11.11	*	*	9	20
Telephones	45	100	*	*	*	*	*	*
Photocopiers	45	10	*	*		*	*	*
Memory cards	*	*	*	*	*	*	45	100
Flash drive	5	11.11	*	*	*	*	40	88.89
Radio	*	*	*	*	*	*	45	100
Library website	45	100	*	*	*	*	*	*
Electronic shelves	*	*	*	*	*	*	45	100
Computerized exit door	*	*	*	*	*	*	45	100
Databases	45	100	*	*	*	*	*	*

Others	*	*	*	*	*	*	*	*

**Key: SA=Strongly Agree, A=Agree, DA=disagree, SDA=Strongly Disagree

Table 1 above displays data on types of ICT facilities available for the management of the university library. The data showed that computer, telephones, photocopiers, library website and databases with 100% responses respectively were the most available in the management of the library while, barcode readers, memory cards, radio, electronic shelves and computerized exit door were not in use as the 45 respondents or 100% indicated SDA of their availability. Other ICT facilities available in the library include: CD-rom with a SA response of 76.67% or 39 respondents, internet facilities, 31 of the respondents representing 68.89% SA and scanners with a positive response of 40% or 18 respondents (see figure for the standing)

Table 2: Library functions where ICT facilities are applied in the management of the library

Items	SA		A		DA		SDA	
	F	%	F	%	F	%	F	%
Acquisitions of information resources	*	*	*	*	45	100	*	*
Processing of information resources	45	100	*	*	*	*	*	*
Storing of information resources	34	75.56	*	*	2	4.44	9	20
Retrieval of information resources	*	*	36	80	9	20	*	*
Dissemination of information resources	14	31.11	*	*	*	*	31	68.89
Preservation and conservation of information resources	25	55.56	10	22.22	*	*	19	43.22
Weeding of information materials	*	*	*	*	*	*	45	100
Serial control	45	100	*	*	*	*	*	*
Interlibrary loans	*	*	*	*	*	*	45	100
OPAC	*	*	45	100	*	*	*	*

**Key: SA=Strongly Agree, A=Agree, DA=disagree, SDA=Strongly Disagree

Table 2 above shows the responses of the staff on the library functions where ICT facilities were applied to the management of information resources in the library. The data did reveal that 100% or 45 respondents did SA that ICT facilities are being used in processing of information

resources, OPAC and serials control in the library. The same number of respondents, also SDA that ICT facilities were being used in weeding of information materials and in interlibrary loans. 36 of the respondents agreed that it is used in the retrieval of information resources, 35 or 77.78% affirmed that it is being used in Preservation and conservation of information resources, 34 or 75.56% agreed that it is used in storing of information resources. The data further showed that the library does not utilize ICT facilities in the dissemination of information resources to users with a negative response of 68.89% representing 31 respondents.

Table 3: ICT facilities applications in library operations and routines for information resources management in the university library:

Items	SA		A		DA		SDA	
	F	%	F	%	F	%	F	%
Selection of library resources	45	100	*	*	*	*	*	*
Ordering of information resources	*	*	32	71.11	3	6.67	10	22.22
Use of publisher catalogue	34	75.56	*	*	2	4.44	9	20
Purchasing of information resources	*	*	36	80	9	20	*	*
Payment for information resources	34	75.56	*	*	*	*	11	24.44
Cataloguing /classification of information resources	45	100	*	*	*	*	*	*
Charging and discharging of information resources	*	*	*	*	*	*	45	100
Library information resources statistics records	45	100	*	*	*	*	*	*
Marketing of library and information products and services	*	*	*	*	*	*	45	100
Registration of library users	*	*	25		*	*	20	
Library Staff/Students daily statistic records	*	*	13	28.89	*	*	32	7.11
Entrance/ exit to the library security devices	*	*	*	*	*	*	45	100

Fire and smoke detection	*	*	*	*	*	*	45	100
Communication between library staff	*	*	16	35.56	*	*	29	64.44
Surveillance of information resources on the shelves	*	*	*	*	*	*	45	100

**Key: SA=Strongly Agree, A=Agree, DA=disagree, SDA=Strongly Disagree

Table 3 indicates that ICT facilities that are applied in library operations and routine jobs. The data reveal that ICTs are frequently applied in cataloguing and classification of information resources, library information resources statistics records and selection of information resources with a score of 100% respectively. These were followed by Payment for information resources and use of publisher catalogue with scores of 34 (75.56%) respectively.. Library Staff/Students daily statistic records have the least frequency of 13 (38.89%). This is because the library still uses manual system of statistical record and ICT has not been applied in such operations and routines of the library. As can be seen from the data collected good number of the library routine operations are still been done manually.

Table 4: Extent to which ICT facilities are utilized for the management of the university library

	VHE		HE		LE		VLE	
Items	F	%	F	%	F	%	F	%
Computers	45	100	*	*	*	*	*	*
scanners	*	*	25	55.55	12	26.67	8	17.78
DVD	*	*	*	*	*	*	45	100
CD-rom	33	73.33	*	*	12	26.67	*	*
Digital camera	*	*	*	*	*	*	45	100
Barcode readers	*	*	*	*	*	*	45	100
Telephones	45	100	*	*	*	*	*	*
Internet facilities	27	60	*	*	18	40	*	*
Memory cards	*	*	*	*	*	*	45	100
Printers	45	100	*	*	*	*	*	*
Electronic shelves	*	*	*	*	*	*	45	100
CCTV surveillance security system	*	*	*	*	*	*	45	100
Computerized exist door	*	*	*	*	*	*	45	100

**Key: VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

On the extent in which ICT facilities were being utilized in the library, the data gathered as indicated in table 4 above stated clearly that computers, telephones and printers with 100% strongly agreed

responses were utilized in a very high extent. They were followed by CD-rom-33 (73.33%), internet facilities- 27 (60%) respondents and scanners-25 (55.55). The respondents, however, indicated that barcode readers, memory cards, electronic shelves, computerized exit doors and CCTV surveillance security systems which had 100% disagreed responses respectively were not in use for the management of the library because such ICT facilities were not available in the library.

Table 5: Integrated Library Software (ILS) available and are being used for the management of information resources in the library

ILS	Decision
CDS/ISIS	X Not applicable
X-LIB	X Not Applicable
KOHA	X Not Applicable
ALICE FOR WINDOWS	X Not Applicable
VIRTUA	X Not applicable
ADLIB	√ Applicable
MILENNIUM	X Not Applicable
DSpace	X Not Applicable

The data as contained in table 4 above showed that the integrated library management system software in use in the library under study was the ADLIB

Table 6: Use of ILS modules to library operations and routines in the management of the university library information resources

Modules in use	Agree		Disagree	
	F	%	F	%
Acquisitions	15	33.33	30	66.67
Cataloguing	45	100	*	*
Circulation	37	82.22	8	17.78
Serial control	45	100	*	*
OPAC services	25	55.56	20	44.44
Reporting	45	100	*	*
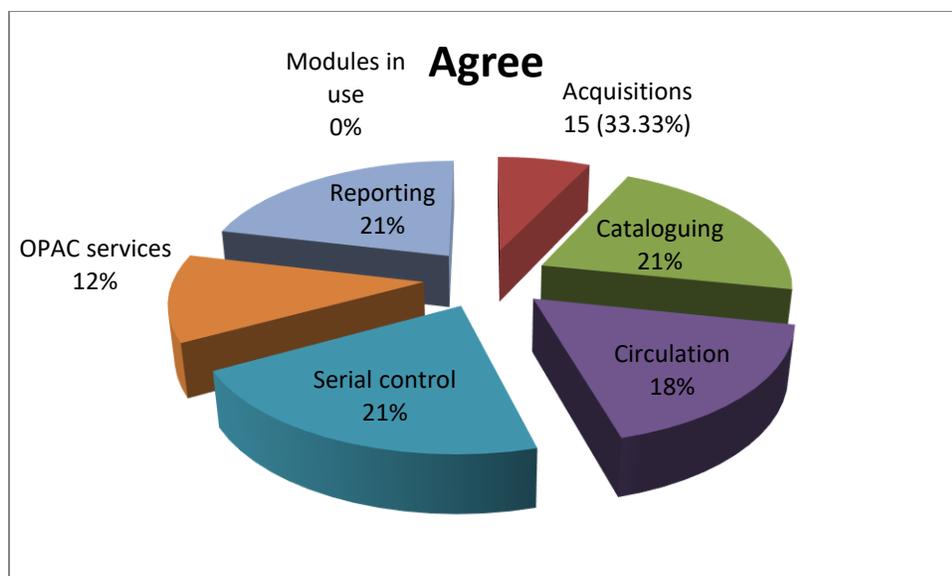
Figure 1: ILS Modules

Table 6 and Fig.1 above showed the library operations and routines in which ILS are applied. It was discovered that ILS is being applied in the provision of OPAC services 100% and circulation with a score of 81 (29.9%). Library acquisition has the least response of 15 or 33.33%. From observation, the researcher discovered that the acquisition module of the ILS is rarely used due to lack of regular internet connectivity and the staff inability to acquire information resources online. OPAC and circulation modules of the ILS are partially utilized because the libraries have LAN network but have challenges of internet connectivity. The respondents were also asked to indicate which type of communication media they use to get information from the information resources vendors, library users, donor agencies and the university management. A list of relevant communication media was provided for them to select as many as relevant. Their responses are shown in Table 7 and figure 2 below.

Table 7: Communication media used to communicate with the library stakeholders

	Agree		Disagree	
Items	F	%	F	%
Telephone calls	45	100	*	*
E-mail, Social media. E.g face book, twitter, blog etc	15	33.33	30	66.67
Using teleconferences	*	*	45	100

Others (SMS, MMS)	31	68.89	14	31.11
Whatsapp	45	100	*	*
others	*	*	*	*
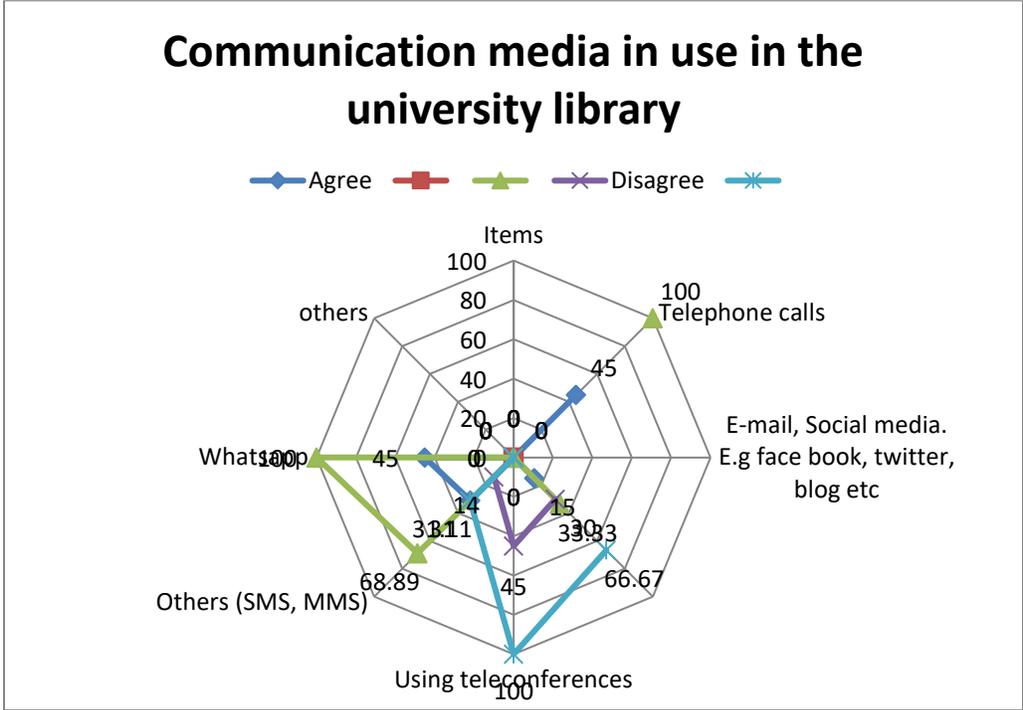
Figure 2: Communication media in use in the library

Table 7 and Figure 2 above revealed that the respondents used telephone calls and whatsapp more to communicate with the stakeholders with the score of 45 (100%) followed by SMS with a score of 68.89% or 31 respondents. However, some of the respondents complained of non-provisions of official telephones or communication allowances to ease interaction with staff within and outside the library especially the library with satellite libraries. Surprisingly, teleconferences which is supposed to be the most useful facilities in communication, recorded a 100% score of non-availability and non-utilization.

Table 8: Competence of library staff in the application of ICT facilities for the management of library information resources

	SA	A	DA	SDA

Items	F	%	F	%	F	%	F	%
I can select, order and acquire library information resources online through the online publisher catalogue	8	17.78	5	11.11	10	22.22	22	48.89
I can catalogue/classify information resources with the use of library application software	15	33.33	2	4.44	11	24.44	17	37.78
I can save, retrieve and disseminate library information resources with the library integrated software	32	71.11	*	*	*	*	13	28.89
I can scan information resources in the library using scanners	21	46.67	10	22.22	12	26.67	2	4.44
I can digitize library information resources available in the library	30	66.67	9	20	4	8.89	2	4.44
I can create backup of information resources into the storage devices like DVDs, CDs, Memory card, flash drive e.t.c.	33	73.33	*	*	12	26.67	*	*
I can use digital cameras to digitize library information resources	5	11.11	2	4.44	20	44.44	18	40
I can use barcode sensor or reader in securing the library information resources.	5	11.11	2	4.44	30	66.67	8	17.78

**Key: SA=Strongly Agree, A=Agree, DA=disagree, SDA=Strongly Disagree

The data collected as shown in table 8 revealed   staff competence in the use of ICT facilities. 33 respondents (73.33%) strongly agreed that they have the competence to create a backup of information resources into storage devices while 32 (71.11%) agreed that they can save, retrieve and disseminate library information resources with the library integrated software; 39 respondents representing 86.67% agreed that they can digitize library information resources available in the library and 68.89% or 31 respondents agreed that they can scan information

resources in the library using scanners.. Other items recorded higher number of respondents in disagreement (see table)

Table 9: Extent to which the applications of ICT facilities affect the management of the library

Items	VHE		HE		LE		VLE		Decision
	F	%	F	%	F	%	F	%	
It has improved staff productivity	8	17.78	28	62.22			9	20	Accepted
It enhances users satisfaction	19	42.22	11	24.44	15	33.33	*	*	Accepted
It facilitates acquisition of the library resources	*	*	37	82.22	4	8.89	4	8.89	Accepted
It is instrumental in expanding the library e-resources	45	100	*	*	*	*	*	*	Accepted
Through copy catalogue, ICT has tremendously improved the processing of library resources	45	100	*	*	*	*	*	*	Accepted
It facilitates registration of library users, charging and discharging of library materials	34	75.56	*	*	11	24.44	*	*	Accepted
It helps in ordering of information resources	*	*	38	84.44	*	*	7	5.56	Accepted
It enhances the preservation of information resources	*	*	29	64.44	7	15.56	9	20	Accepted
It has made library information resource management routines easier	*	*	40	88.89	*	*	5	11.11	Accepted
marketing of library and information products and services	*	*	*	*	45	100	*	*	Rejected
It has increased the numbers of users in the library	16	35.56	*	*	29	64.44	*	*	Rejected
Processing of library information resources take less time using the automated library application software	45	100	*	*	*	*	*	*	Accepted
It has eased the production of library catalogue and users can access information resources easily through the library									

	VHE		HE		LE		VLE		Decision
OPAC	45	100	*	*	*	*	*	*	Accepted
Users can easily access the library database and IDRs	*	*	21	46.67	9	20	15	33.33	Rejected
Application of ICTs in cataloguing/classification system of a library and information centre is most successful due to its speed, accuracy and reliability than the manual system	45	100	*	*	*	*	*	*	Accepted

**Key: VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

The responses in Table 9 above indicate the extent to which the inclusion of ICT facilities has affected the management of the library. All the respondents (100%) agreed that the inclusion of ICTs have made processing of library information resources take less time using the automated library application software; instrumental in expanding the library e-resources; through copy catalogue, it tremendously improved the processing of library resources; instrumental in expanding the library e-resources, It has also eased the production of library catalogue and users can access information resources easily through the library OPAC and the inclusion has made cataloguing/classification system of the library most successful due to its speed, accuracy and reliability than the manual system. 82.22% or 37 respondents indicated that the inclusion of ICT facilities has facilitated acquisitions of library resources while 36 respondents or 80% indicated that the inclusion of ICTs has in high extent improved staff productivity and 30 (66.67%) indicated that it has enhanced the users' satisfaction among others. The inclusion of ICT facilities however did not increase the numbers of library users and neither did it enhance the marketing of library and information products and services with scores of 64.44% and 100% respectively in the negative.

Table 10: Challenges to ICT facilities utilization in the management of the library

	SA		A		DA		SDA		
Items	F	%	F	%	F	%	F	%	Decision
Inadequate funding	13	28.89	27	60	*	*	5	11.11	Accepted
Shortage of manpower	16	35.56	13	28.89	7	16.56	9	20	accepted
Epileptic power supply	45	100	*	*	*	*	*	*	Accepted
Staff apathy towards the									

	SA		A		DA		SDA		Decision
utilization of ICT facilities	*	*	*	*	29	64.44	16	35.56	Rejected
Inadequate staff training opportunities	23	51.11	19	42.22	3	6.67	*	*	Accepted
Poor infrastructural facilities	34	75.56	11	24.44	*	*	*	*	Accepted
Skeletal level of ICT compliance	2	4.44	16	35.56	20	44.44	7	15.56	Rejected
Occasional system failure	22	48.89	10	22.22	6	13.33	7	15.56	Accepted
Users' attitude	*	*	8	17.78	27	60	10	22.22	Rejected
Cost of ICT facilities	*	*	8	17.78	37	82.22	*	*	Rejected
Poor maintenance culture which also affects ICT facilities	20	44.44	17	37.78	4	8.89	4	8.89	Accepted
Frequent change in technology	22	48.89	19	42.22	*	*	4	8.89	Accepted
Lack of ICT policies	35	77.78	3	6.67	7	15.56	*	*	Accepted
Technophobia	*	*	*	*	29	64.44	16	35.56	Rejected
Data base subscription	25	55.56	12	26.67	6	13.33	7	15.56	Accepted
Low bandwidth (slow Internet connection)	12	26.67	28	62.22	4	8,89	1	2.22	Accepted

**Key: SA=Strongly Agree, A=Agree, DA=disagree, SDA=Strongly Disagree
**Benchmark=50%
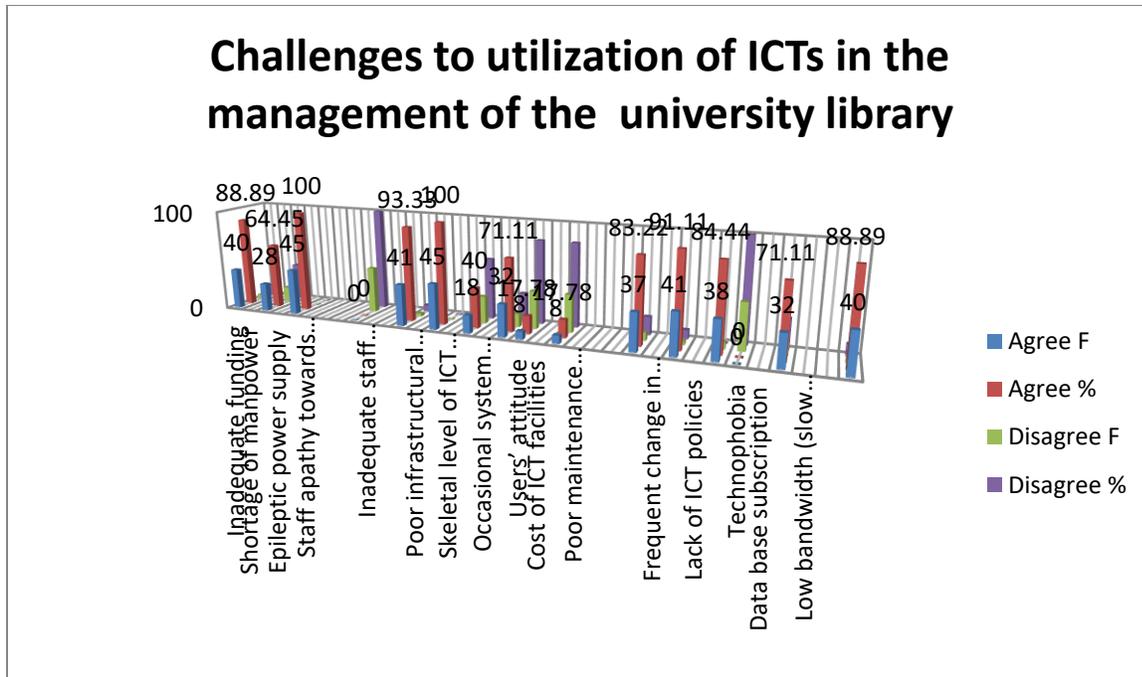
Figure 3: Challenges to utilization of ICTs in the management of the university library

The data in table 10 and figure 3 show the various factors posing as challenges towards the optimal utilization of ICTs in the university library. The extent of each effect is well expressed in figure 9. In all, epileptic power supply and poor infrastructural facilities (100%) respectively, had the lion share followed by inadequate staff training opportunities 42 respondents or 93.33%. Others were; inadequate funding 88.89% or 40 respondents; Low bandwidth (slow Internet connection) 40 respondents representing 88.89%, lack of ICT policies 84.22% or 38 respondents and frequent change in technology 41 respondents or 91.11% among others.

Testing of Hypothesis

Pearson Moment Correlation Coefficient analysis was used to test the relationship of ICT facilities utilization and the management of library information resources at level of significance of 0.05.

Table 11: Correlations between ICT facilities utilization and management of library resources

variables	N	Mean	Std Deviation	DF	2-Sig (tailed)
ICT facilities utilization	45	7.60	3.74		
Management of library resources	45	68.43	17.60	417	0.000

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

Table 10 above on the outcome of the Pearson Product Moment Correlation (PPMC) statistics reveals the existence of a significant relationship between ICT facilities utilization and management of library resources. This is because the alpha level of significance at the calculation index of 0.05 is greater than the calculated P value of 0.000 and the law states that when the P value calculated is less than the alpha level, null hypothesis should be rejected and the alternative upheld. Hence, the null hypothesis which stated that the ICT facilities utilization in the university library has no significant effect on the management of the library was rejected. This implies that ICT facilities utilization in the university library studied have significant effect in the management of library information resources. This implies that with the inclusion of ICT facilities in the management of the library the members of staff perform their library operations and routines very effectively and library users well served.

5.0. Discussion of Results

The outcome of this study did show that ICT facilities available for management of the university library include computers, telephones, library website and databases. Other ICT facilities available in the library include: CD-rom, internet facilities and scanners. As can be seen from the data collected good number of the library routine operations are still been done manually. This result is in affirmation with Adeniji, Adeniji & Oguniyi (2011) who opined that most libraries in Nigeria only use computers, printers, scanners, and Internet for their services. However, it was observed the library has no Fax Machine in her domain. Other studies whose findings are conformity to the ourcome of this study include; DeWatteville and Gilbert (2000) and Nwalo (2005). As well as that of Sivakumaren, Geetha & Jeyaprakash (2011) who in their study on ICT facilities in university libraries in India found that computers, printers, scanners and photocopiers were most of the facilities used

It was disheartening to note that the library has no barcode readers, memory cards, radio, electronic shelves and computerized exit door. This result therefore provides answer to research question-one which is: what type of ICT facilities are available and are being used for the management of library information resources? The data further showed that the university since inception has been using the ADLIB software for their ILMS which is contrary to the finding of Imo and Igbo (2011) who in their study on the challenges of software use in Nigerian university libraries found that more than 75% of the university libraries surveyed have used more than one

software in their automation projects. These university libraries mostly migrated from TINLIB (The Information Navigator Library) management software to other software regimes.

On communication media being used in communicating with library stakeholders, it was found that telephones was the most used followed by SMS, whatsapp and e-mail (see table & figure) which is in contradiction with what is obtained in advanced university libraries as revealed by Nwabueze and Ozioko (2007) who noted that some libraries use teleconferences and social media such as You-tube and yahoo messenger to source for information that are not available in their own libraries with other library abroad and at the same time also use the medium to create awareness for users who are ignorant of the availability of certain information resources in the libraries.

In view of research question-two which is, which library operations and routines are ICT facilities applied for the management of library information resources? The synthesized data (see figure) indicated that ICT facilities are frequently applied in cataloguing and classification of information resources followed by selection of information resources with library Staff/Students daily statistic records having the least frequency This may be attributed to the fact that the library still uses manual system of statistical record and ICT has not been applied in such operations and routines of the library. The result is in conformity with assertion that ICT facilities are being applied on so many library operations and routines and libraries in the third world including Nigeria are gradually but steadily converting from manual to computerized routines as the benefit of the automated or uses of ICT in a library system are both self evident and overwhelming. These library operations and routines activities the librarians do on daily basis include; selection, ordering, cataloguing and classification of information resources etc (Nwalo, (2005)

The study also searched on staff competence in the utilization of ICT facilities and discovered that some were competent in creating backups of information resources into storage devices; save, retrieve and disseminate library information resources with the library integrated software; digitize library information resources available in the library and also scan information resources in the library using scanners among other ICTs skills. The level of staff competence as observed was not far from Aschroft and Watts (2005) assertion that there is a significant skills gap among information professionals in Nigeria, which has resulted in serious under utilization of electronic resources in many libraries in Nigeria. Furthermore, going by Ramzan (2004) and Pairy (2007)

believe that the application of ICT to library processes will help librarians develop appropriate ICT skills, therefore are expected to possess ICT knowledge and skills in operating system, packages and programming languages, web awareness, technical skills, database management, web development, management of multiple media, metadata skills, knowledge of standards such as Z39.50 and Dublin Core and knowledge of online services the staff skills fall short. .On the other hand, the finding is in agreement with that of Islam and Islam (2007) and Levine (2007) who observed that librarians must develop the competencies to carry out effective searches on CD-ROMs, OPAC, on the web, web navigation skills, e-mail, management skills, Windows Explorer skills, and other electronic databases..

On the extent in which the inclusion of ICTs have affected the management of the university library, the result shows that the inclusion of ICTs have made processing of library information resources take less time using the automated library application software; It is instrumental in expanding the library e-resources; ihrough copy catalogue, ICT has tremendously improved the processing of library resources; It has eased the production of library catalogue and users can access information resources easily through the library OPAC and application of ICTs in cataloguing/classification system of the library is most successful due to its speed, accuracy and reliability than the manual system. It was also agreed that they have enhanced the users' satisfaction and improved staff productivity and facilitated acquisition of library resources This implies that Libraries in the third world including Nigeria are gradually but steadily converting from manual to computerized routines as the benefit of the automated or uses of ICT in a library system are both self evident and overwhelming (Nwalo, 2005). The result therefore is an aphorism of Chauhan (2004) position that the benefits of use of ICT in services can be broadly explained in terms of economy, ease, extension (or expansion) and efficiency. Devchoudhary (2007) also observed that ICT has influenced the traditional library services; bringing out fundamental changes in the process of acquiring, processing, storing, retrieving and information delivery. In the contrary, the ICT facilities have not increased the numbers of library users and marketing of library and information products and services of the library as it was observed that the facilities were not channeled towards these areas. This contradicted the study of Afolabi and Abidoye (2011); Aderele and Adelokun (2011) who observed that the development and availability of ICTs in

libraries have today not only increased and broadened the impact of information resources at their doorsteps, but also placed more emphasis on effective and efficient library services to users. .

All the same, it is not heartwarming to state that the library does not have and make use of barcode readers, memory cards, electronic shelves, computerized exit doors and CCTV surveillance security systems in the management of the library because of their non-availability.

The further discovered some of the challenges militating against optimal utilization of ICT facilities in the management of the library. According to available data, these challenges include: epileptic power supply and poor infrastructural facilities; inadequate funding Low bandwidth (slow Internet connection) Lack of ICT policies and frequent change in technology among others (see figure 9). The above findings are in tandem with that of Afolabi and Abidoye (2011) who noted some of the challenges encountered in the library in ICT application to include: Lack of adequate finance and cost of ICT facilities, Shortage of manpower and low level of ICT compliance: Power outage: Occasional system failure/ poor maintenance of ICT equipment: Staff attitude towards ICT utilization/technophobia: Several studies, and that of Ezeani (2000) that showed that older librarians find it difficult to use some of these newer technologies; inadequate training and technical/skilled manpower: Frequent change in technology which might lead to total overhauling of the existing system and lack of ICT policies/ inability of the government to monitor effectively the policy on information technology but a contradiction of Afolabi and Abidoye, (2011) claim that Staff attitude towards ICT utilization/technophobia militate against optimal utilization of ICTs in the library as well as that of Emmanuel and Alfred (2008) who posited the challenges relate to acquisition of ICTs, preservation of electronic information resources, maintenance and security issues, training of users, and general lack of awareness and commitment among library stakeholders .

5.1. Conclusion and Recommendations

No matter the approach taken and the angle at which we looked at it, it is an established aphorism that the emergence of information and communication technologies (ICTs) have brought an undeniable transformation in library operations and the ways services are provided to users and other stakeholders. Inasmuch as, the library of study has not fully integrated ICTs in all her services, the outcome of this study did show that the inclusion of ICT facilities in the

management of the library has tremendous positive effect in the management of the library. The tested hypothesis (see table 11) indicated that the utilization of ICT facilities have significant effect in the management of the university library.

The emphasis therefore, is that all hands must be on deck as there is the need for government, university commission, university management, university librarians and other stakeholders in higher education to collectively agree and believe that there is the need to have the entire university system automated for effective and efficient service delivery and to partake in global resource sharing in an era in which information is growing at an astronomical proportion and networking the order of the day. To this end, the stakeholders should come up with operational strategies as to realizing this. Strategies so to speak, are usually the measures; scheme, plan of action, approach, schedule, master plan or blueprint adopted by an organisations, institutions, or individuals in order to carry out any action for the purpose of accomplishing tasks. It is on this ground that the following proposals are propounded:

➢ In the words of Etim (2006) the strategies to cope with the challenges of ICTs application in Nigerian university libraries must start with education for librarianship. He stressed that the advocacy for continuing professional education becomes inevitable, especially in core competencies of ICT.

➢ There is need for university librarians to do needful by ensuring that fund appropriated for in-servicing trainings (workshops, seminars and conferences) are used for same purpose instead of seeing it as an opportunity of enriching themselves at the detriment of library staff who are left outdated in knowledge of the latest trends in the field.

➢ The issue of inadequate funding should be tackled with all amounts of commitment, seriousness and honesty by both the federal government and the university management. If one should state the obvious, the government may not all the time be blamed for inadequate funding of the library as it has been observed that most funds appropriated for university library development are being misappropriated by university management while the university librarian works as a collaborator. To this end, government should establish honest monitoring made up of men and women of integrity to monitor and ensure that any money released by government for university library development are used accordingly.

➢ Integrated library system software should not be purchased for purchasing sake. As was observed, the University of Study acquired ADLIB software that all the modules were stand-alone in that none of the departments could interface including the OPAC which incapacitated the optimal utilization of the entire system. Worse still, none of the librarians was trained on the software management as the little they knew were based on reading of the operational manual which was contrary to the standard set for acquiring such system. So effort should be made to ensuring that librarians are trained on the management of integrated library system software acquired and not to leave them at the mercy of operational manuals which will eventually lead to under-utilization of such systems.

➢ The issue of erratic power supply is no longer news in this part of the globe. It behooves university management to take the bull by the horn by sourcing for alternative sources of power like solar and generating plants. The truth is that electricity supply in the country is in the moribund and university management and the library relying solely on it is suicidal. Time has come for university library management in conjunction with the university management to think outside the box and solve this poor electricity supply challenge on campuses once and for all for effective service delivery to the students.

➢ Generally, to improve the application of ICTs in libraries, more attention and funds should be committed to the training and procurement of ICT infrastructure in university libraries with trainings aimed at the computerization of libraries. On the other hand, university library management should solicit funds from foreign agencies and foundations who are willing to give financial support and equipment to libraries.

➢ Finally, policy should be put in place by National Universities Commission mandating all universities to have their libraries automated within a specific period of time as to allowing for collective resource sharing and proper networking among university libraries. If this strategies are applied, it will enhance the ICT application and job performances of the library staff in this digital age thereby; enhancing universal access through deployment of affordable ICTs., improving of connectivity in libraries, enabling access by all people to information through the use of ICTs, building of public awareness on the capabilities of ICTs, developing human capacity to exploit the benefits of ICTs

and providing technical assistance and support to ICT and making available appropriate electric power sources.

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