

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

8-10-2021

Use of Information and Communication Technology as Correlates of Service Delivery by Library Personnel in Ekiti State Universities, Nigeria

Jemilat Yusuf

Afe Babablola University, Ado-Ekiti, Ekiti State, Nigeria., jemilat.yusuf@yahoo.com

Joseph Kehinde Fasae

Afe Babalola University, Ado-Ekiti, Nigeria

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

Yusuf, Jemilat and Fasae, Joseph Kehinde, "Use of Information and Communication Technology as Correlates of Service Delivery by Library Personnel in Ekiti State Universities, Nigeria" (2021). *Library Philosophy and Practice (e-journal)*. 6144.

<https://digitalcommons.unl.edu/libphilprac/6144>

Use of Information and Communication Technology as Correlates of Service Delivery by Library Personnel in Ekiti State Universities, Nigeria

Yusuf Jemilat

Afe Babalola University Ado-Ekiti, Nigeria

jemilat.yusuf@yahoo.com

&

Fasae Joseph Kehinde

Afe Babalola University Ado-Ekiti, Nigeria

kennyfash2000@gmail.com

ABSTRACT

The study aims to examine the nexus between ICT use and service delivery in the Universities, in Ekiti State, Nigeria. The descriptive survey research design was used for the study. The population consists of one hundred and fifteen (115) Library personnel in the three universities in Ekiti State. The library personnel were all selected using the total enumeration technique due to the small size of the population. A self-structured questionnaire was the research instrument and data collected were analysed using percentages and mean. Finding shows that the ICT facilities used for service delivery in university libraries are photocopier, printer, computer, OPAC, Internet services, and scanners, among others, while the frequency of using the ICT facilities is moderate ($\bar{x} = 51.35$). The study discovered that the circulation of new arrivals services was the leading services delivered, followed by current awareness, and the selective dissemination of information, among others, by the staff of the libraries. Information and Communication Technology use is germane to effective service delivery by library personnel. Thus, librarians must become higher system thinkers and fully equip themselves to work in digital and computer environment. Based on the findings, recommendations were made.

Keywords: ICT use, Library personnel, Service delivery, University, Nigeria, Libraries

Introduction

A university is an institution of higher (tertiary) education and research which awards degrees in various academic disciplines. Universities typically provide undergraduate and post-graduate education, and it is also a place where enquiries are pushed forward, discoveries verified and perfected, and error exposed by collision of mind with mind, and knowledge with knowledge. Hence, a university library is established to serve two complementary purposes: to support the curriculum, and to support the research of the university, faculty and students. It supports university functions of teaching, learning, research and community services in a way that is consistent with and supportive of the institution's mission and goals. This is achieved through the acquisition of relevant information materials, processing, organising, preserving and disseminating them to the library users to enhance learning, teaching and research activities of the university community.

The university library's most powerful asset is its staff. Library personnel have the power to change lives and build community but to do this, they have to leave their desks, leave their buildings and show the community what a powerful tool they are. Library personnel can be categorised into professional and para-professional staff. The professional staff are librarians who have Bachelor Degree, Master Degree, or Doctors of Philosophy (Ph.D.) in Library Studies, Library and Information Science, or in related discipline. The holders of the professional staff are responsible for the execution of professional duties such as cataloguing and classification, abstracting, indexing, selection and acquisition of library resources, administrative responsibilities and provision of consultancy services. The para-professionals are the personnel who possess diploma or certificate of library studies or its equivalent. This category is referred to as "library officers" and they assist the professional staff in preparing worksheet for cataloguing and classification, registration of new users, shelving, shelf reading and attending to various users by satisfying their need at the circulation desk, and as well assist in the delivery of various services.

Service delivery is a business component that defines the interaction between service providers and clients in which the provider offers services, as information or as an activity, and the client finds value or loses value. Therefore, good service delivery should provide clients with greater value (Ekere, Ewulum, Eze, Okpala, & Ebobo, 2019). Service delivery by library personnel in university libraries is fundamental to the quality of university education. The

objective of service delivery in university libraries is to ensure that the information needs of users are met through effective and efficient provision of information services and resources in the library, for research, learning, and teaching. Mbofung and Popoola (2014) described library service delivery as that which involves individuals, who have expectations of the library and information science professionals in such ways as how they relate and behave towards the users, colleagues, their organisations and the entire society. In the practice of librarianship, service delivery is determined from the types of services rendered in the library and how it is rendered. Traditionally, libraries provide information to their users as well as carried out their duties such collection development, user instruction, reference services and current awareness services manually. However, it has been observed that over times, the service delivery is now changing due to the advent of Information and Communication Technology. Nigerian universities and their libraries, in their roles as knowledge creators and gatekeepers of knowledge, are rapidly witnessing the application of various information and communication technology (Ojedokun, & Victoria, 2015).

Information and communication technology (ICT) is a diverse set of technological tools and resources used to communicate, create, disseminate, store, manage information and promote human activities (Awotona, 2019). These technologies include; computers, Internet, printer, scanner, photocopy machine, binding machine, laminating machine, broadcasting technologies (radio, public address speaker and television), projector and telephony among others, and are widely used in today's education field most especially universities libraries. Furthermore, Agboola and Shaibu (2019) define ICT as the application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information. However, this definition has been expanded to include any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge (Agim, Iroeze, Osuji, & Obasi-Haco, 2018).

ICT has changed our world and ways we do things, which bring us not only great benefit but also tough challenges of quickly adapting to new trends (Amuche, & Solomon, 2014). It has changed library operations and revamped many operations. 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 behooves 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. In the present age, besides using the new tool to fulfill the traditional roles of the library, librarians, as the managers of libraries evolved some new practices in the profession. Some of the new developments include digital 9 environments for information acquisition, processing and dissemination. As a result of the digital technology introduced into the profession, such nomenclatures as Internet librarians, digital librarians, cyberians or Weberian, were attributed to the emerging librarians. These are librarians that have acquired the new literacy skills in the manipulation of the ICT tools for information service delivery to the library clientele.

However, it has been observed and established that most university libraries fail to render adequate and quality services as they have not totally integrated the use of ICT in their service delivery. The university libraries in most part of Nigeria no longer deliver effective library services and the services rendered is not only inadequate but worrisome due to their inability to integrate the use of Information and Communication Technology (ICT) into their services. Also, where these ICT facilities are available, they are moderately used due to lack of technical know-how and poor maintenance by library personnel in the libraries. This study therefore takes its root from this and designed to examine the use of information and communication technology as it correlates to service delivery by library personnel in universities in Ekiti State, Nigeria.

Objectives of the Study

The main objective is to examine the use of information and communication technology as correlates of service delivery by library personnel in Ekiti State universities, Nigeria. The specific objectives are:

1. to find out the purpose of using ICT facilities by library personnel in university library in Ekiti State;
2. to determine the ICT facilities used for service delivery in Ekiti State Universities library;
3. to access the frequency of use of ICT facilities for service delivery by library personnel in Ekiti State Universities library; and
4. to find out the services delivered using information and communication technology by library personnel in Ekiti State Universities library.

Research Questions

The following research questions will guide the study:

1. What are the purposes of use of ICT facilities by library personnel in university libraries in Ekiti State?
2. What are the ICT tools used for service delivery in university libraries in Ekiti State?
3. What is the frequency of use of ICT facilities for service delivery by library personnel in university libraries in Ekiti State?
4. What are the services delivered using information and communication technology by library personnel in university libraries in Ekiti State?

Review of Related Literature

Attempts were made here to peruse related works of other authors on use of information and communication technology and service delivery by library personnel. This section is however broken into sub-sections.

1. **Theoretical framework-** Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) has been the most influential and widely adopted model to predict the acceptance and use of various learning technologies. This is because the model has a solid theoretical basis and has sufficient empirical support. When used effectively, the model can save an educational institution the risk of investing in technology that may remain neglected or grossly underutilized. In particular, the model establishes that three factors influence the choice of users to accept a technology: the attitude towards the new technology, the perceived ease of use and the usefulness of the new technology (Venkatesh, & Davis, 2000). The model suggests that when users are introduced to a new technology, a number of factors influence their decision on how and when to use it. These factors are behavioral intentions, perceived attitude and usefulness of the system, perceived ease of use of the system, individual intention, and the condition of facilitation or organization. According to the Technology Acceptance Model (TAM), the user's attitude is believed to be influenced by two main beliefs: perceived utility and perceived ease of use, which in turn have a direct influence on

the attitude toward the use of the system device, which ultimately leads to the use of the system.

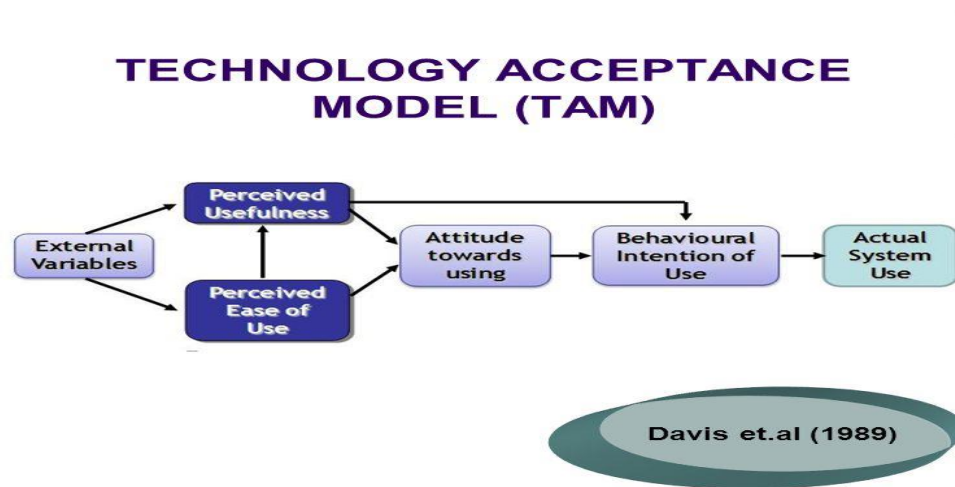


Figure 1: Davis' Technology Acceptance Model (TAM)

According to Davis, the element of perceived utility (PU) is relevant to the study because library users believe that the use of a computer system has linked them to a local database or the Internet, phones and other electronic devices to search and retrieve. Information electronically improve one's academic and professional activities compared to traditional methods of searching for information in libraries. Perceived Ease of Use (PEOU) is another element of the theory relevant to the study. The ability of library staff to accept and use electronic devices will facilitate their usefulness and influence the provision of library services. The efforts used to provide effective and efficient library services is automatically improve with the use of technology. Furthermore, the use of technologies in the provision of educational services has been among educators for quite some time. The literature indicates that the electronics industry has always put pressure on the education system to accept and use technologies not only in teaching and learning, but in support of other services within the school system (Venkatesh and Davis, 2000) . Therefore, the researcher adopted this theory due to its relationship to the problem under consideration.

2. Other Reviewed Literature

The effectiveness of library services today largely depends on Information and Communication Technology (ICT), such that libraries with necessary infrastructural capabilities

can tap the ICT skills of their staff for development (Oyedokun, Oyewumi, Akanbi, & Laaro, 2018). There are many benefits of using ICT in libraries, as it has increased easy access to information and offers a platform for library collaboration and interoperability, being a true tool for e-learning around the world (Oyedokun, 2018) in Oyedokun, Oyewumi Akanbim, & Laaro, 2018). The researchers also noted that it also provides better management of library operations by improving library productivity, operations and services. The literature argues that the application of ICT in libraries, according to Chukwueke and Onuoha, (2019), is of utmost importance for its many benefits. Among these advantages are; increase the effectiveness and efficiency of library services, reduce access times, information location and retrieval, save physical space in the library, etc. ICT has accelerated e-librarianship with diverse library facilities and services for users. The idea of Online Public Access Catalogue (OPAC) electronic libraries, hypertext and teleconferencing for the use of libraries and information services has become universal. Innovative scientific advances have profoundly influenced libraries, and virtually all activities carried out in a library have been taken over by electronic mechanization and telecommunications (Wawu, 2019).

In order for libraries to remain relevant to their customers, libraries must follow the fundamental business way, which is to deliver what their users requested for in the best possible way (Kodama, 2013). To make this possible, the Asia Pacific International Conference on Digital Libraries [ICADL] (2010), highlighted that the skills needed for library staff will help shift their services away from user-centered books. As ICT plays an important role in almost all university library operations, as noted by Dhanavandan and Tamizhchelvan (2014), these libraries have no choice but to change their services and modernize their operations to adapt to new technologies. Aina (2004) postulates that there is efficiency in the organization of resources, as the delivery and dissemination of information have become effective and easy. Repetitive and routine activities in the library have been eliminated. Libraries are playing a very important role in facilitating access to global information and knowledge resources using ICT.

Various studies have been conducted on the ICT and library service delivery, where scholars have reported varied outcome depending on the circumstances. Singh and Arora (2015) found out from a study which investigated library services and their resources in the State of Haryana, India, that all the university libraries offered a range of services which included current awareness service, selective dissemination of information, photocopy service, bibliography service, document delivery service, interlibrary loan (ILL) service, reference service, circulation,

membership, OPAC/Web OPAC services. Saini (2014) opined that document delivery service is useful for users because it eases use and speed up delivery factors. Saini recommended that to improve the quality of their services, librarians needed to collaborate with other neighbouring libraries in addition to document delivery centres to provide access to the resources.

In another study by Mairaj and EL-hadi (2012), conducted a research on the availability and use of ICT resources in Medical libraries in Pakistan, where medical libraries in Lahore were surveyed. They reported that ICT resources used in these medical libraries include computers, scanners, DVD barcode reader, fax machine, multi-media projectors, software and databases, Internet access, and library website, while digital subscriber's lines are mostly used in this library. In other words, as the library continues to redefine its role in the digital environment, it needs to leverage its strengths and innovate to create responsive and affordable services (Sahin, 2006). Fidelis (2018) study investigated the application of Information and Communication Technologies (ICTs) in supporting innovative services at the University of Dar es Salaam (UDSM) Wilbert Chagula Library. Seven Heads of Sections, ten academics, thirty administrative and, two ICT staff, and the Director of Library Services were used. The results show that virtual desk services are the services mostly performed by the staff (72.5%), followed by provision of electronic resources and databases (70%), and chat with a librarian (65%). Other tasks mentioned by considerable percentages were literature searches (52.5%), QR code access to resources (50%), ask a librarian (27.5%), and institutional repository was the least (22.5%). Haneefa (2007) studied the application of ICT in special libraries in Kerala, India. In the study, she found that the library catalog was the most popular area for automation.

In Nigeria context, the advent of ICT to the global scene according to Ademodi and Adepoju (2009), caused a revolution in libraries and this has changed the ways and patterns in which information services is been delivered. Mommoh and Emmanuel (2019) opined that the essence of ICT utilization for service delivery in libraries is to improve the quality of services provided by staff to the library users. Osuchukwu, Obuezie and Ogwuche (2017) conducted a study on availability and utilization of Information and Communication Technology facilities in Madonna University library, Nigeria. The impact of ICT in libraries cannot be over-emphasized, as there is no section of library operation or practice that has not been shaped and reshaped with the introduction of ICT (Oyedokun, Oyewumi, Akanbi, & Laaro, 2018). The findings of the study showed that the ICT section has resources and facilities that are available which students

utilized to a certain extent. The available ICT facilities include computers, Internet, photocopier, flash drives, scanner, CD-ROMs, e-mail services, as well as institutional website. It also showed that students utilized the ICT facilities and resources available frequently and to a very great extent. Although, there are issues as some ICT facilities are not available, thereby not utilized by the students.

Akpoo's (2019) survey on application of ICT for effective library service delivery in academic libraries in Benue State discovered ICT resources were applied in areas like ordering, classification, bibliographic searches, registration of users, interlibrary cooperation, book reservation, charging and discharging of library materials, receipt of order, library statistics, among others and extent of application was significantly high. Onoriode and Iwighreghweta (2011) have chosen a modern technology for the library which includes computers, for example desktop, laptop, I-phone, I-pad etc., and peripherals such as keyboard, speakers, barcode readers, printers etc. Network equipment and cables such as Cat-5, coaxial, optical fiber and various parrot connectors, routers, switches, satellite and parrot modems. Iyabode (2015) discovered that different ICT facilities like printers, internet connectivity, e-mail facilities, scanners, laptops and others were available for use in the libraries understudy. The most used facilities are e-mail facilities, internet connectivity, printers and laptops that are used for resource sharing services, e-mail services, research, internet and current awareness services.

A research carried out on 122 professional and para-professional librarians in Ambrose Alli University library, Benson Idahosa University library and John Harris library, university of Benin, showed that librarians majorly used computers (100%), Telephone (97%) and Printers (85.7%). It also revealed that majority (98%) of the respondents use the ICTs to assist researchers while 100% of them use ICTs in answering user queries (Aiyebelehin, Ikenwe, & Okpetu, 2017). On the frequency of using ICT for service delivery by library staff, Aiyebelehin, Ikenwe, and Okpetu (2017) findings also revealed that professional and para-professional librarians used computers on daily basis, while computers connected to Internet, CD-ROM, OPACs, E-Books, and Printer are used on daily and weekly basis in the process of service delivery. It is only the fax machine that is used on a monthly basis by a meager minority. Similarly, a research done by Enakrire and Ocholla (2017) where the population largely covered professional librarians across six sampled university libraries in Nigeria and South Africa, shown that irrespective of the challenges facing the libraries which border on inadequate infrastructure

and professional staff, libraries have devised strategies for coping and rendering services with the available ICT facilities.

Ivwithreghweta (2013) shows that most of the respondents, 40(80%) and 5(10%) fully agree that the services and operations in the library where ICT are mainly applied are in the acquisition of materials, this is followed by OPAC 30(60%) and 10(20%) of the respondents who have accepted and fully agree to provide online catalog services with public access to their users. This finding is consistent with that of Faboyinde (2006), who lamented that the application of ICT in Nigerian tertiary institutions shows awareness of the important role ICT can play in the provision of library services. Similarly, Adeniran et al. (2020) carried out an investigation on uses and application of ICT in Nigeria University Libraries: the case of UNN. Findings of the study revealed that, ICT facilities are available in UNN library but some are available than others. The facilities mostly used are OPAC, Internet and virtual library, which are used to source for reference materials, complete project work, update knowledge and lecture notes.

Oyedokun (2018) in Oyedokun, Oyewumi, Akanbi, and Laaro (2018) noted that the use of Information and Communication Technology (ICT) facilities in performing library functions are becoming very useful in the libraries because it makes service delivery to the user faster and more efficient. Without frequent use of ICT tools, librarians would not be able to cope with information explosion of today information society. Academic libraries are known for their duties of serving as gatekeeper and custodian of their parent institutions information resources through their processes of collection development, users instructions, circulation and reference services, SDI, CAS, etc. using physical materials, but the advent of ICT has transformed the processes which now poses opportunities and challenges that shake up the whole operations of information service delivery (Ayoku & Okafor, 2015). It is also considering that the proper infrastructure and ICT-enabled environment can provide better and faster services to users. In the North Central Nigeria, Mommoh and Emmanuel (2019) discovered ICT facilities were available for minimal use for service delivery, while the major problems hindering utilizations of ICT for service delivery in research libraries of the North Central Nigeria were those of ICT policy and in adequate funds.

The overall review illustrates that, the appropriate use of ICT in library is most essential. It showed the needs and benefits of using ICT for service delivery in the university libraries globally, including most part of Nigeria, the available ICT facilities, how often the facilities is

been used, and their challenges. However, none of the literature had reported on the available ICT tool used in services delivered, and various services provided in university libraries in Ekiti State, Nigeria. It is on this premise that this research seeks to evaluate the use of ICT as correlates of service delivery by library personnel in universities in Ekiti State, Nigeria.

Methodology

The descriptive survey research design of the correlational type was used for the study. The population consists of Library personnel in universities in Ekiti State, Nigeria. According to the data collected from the Management Information System (MIS) in these university libraries (2019), there are forty-three (43) librarians and seventy-two (72) library officers totaling one hundred and fifteen (115) library personnel. The questionnaire was the data collection instrument and total enumeration sampling technique was adopted since the size of the population is low. The scale was adopted from the study of Adebayo and Mabawonku (2017). The researchers administered and retrieved 110 completed and correctly filled copies of the instrument personally. Data was analyzed with the use of frequency counts and mean which were presented in Tables.

Table 1 Population of the Study

| S/N | Universities | Owner | Librarians | Library Officers | Total |
|-----|--------------------------------------|---------|------------|------------------|------------|
| 1 | Federal University Oye Ekiti | Federal | 9 | 16 | 25 |
| 2 | Ekiti State University, Ado Ekiti | State | 24 | 40 | 64 |
| 3 | Afe Babalola University, Ekiti State | Private | 10 | 16 | 26 |
| | Total | | 43 | 72 | 115 |

Source: Author's computation (2020)

Results

Demographic Characteristics of the Respondents

Table 2: Demographic Information of the Respondents

| Respondents' Demographic Information | Frequency | Percentage (%) |
|--------------------------------------|------------|----------------|
| Name of Library | | |
| Afe Babalola University Ado-Ekiti | 24 | 21.8 |
| Ekiti State University | 61 | 55.5 |
| Federal University Oye-Ekiti | 25 | 22.7 |
| Library Status | | |
| Librarians | 42 | 38.2 |
| Library Officers | 68 | 61.8 |
| Age | | |
| 21-26 | 5 | 4.5 |
| 27-32 | 21 | 19.1 |
| 33-38 | 29 | 26.4 |
| 39-44 | 22 | 20.0 |
| 45-50 | 21 | 19.1 |
| 50 and Above | 12 | 10.9 |
| Total | 110 | 100.0 |

Source: Author's computation (2020)

The result in Table 2 shows that 24(21.8%) of the respondents used in this study were from Afe Babalola University, 61(55.5%) were from Ekiti State University while the remaining 25(22.7%) were from Federal University, Oye-Ekiti. The Table further reveals that 42(38.2%) were librarians while the remaining 68(61.8%) were library officers; implying that library officers outweighs librarians in this study. By their age, 5(4.5%) were in the age bracket of 21-26 years and 45-50 years respectively, 21(19.1%) fell within the age bracket of 27-32 years, 29(26.4%) were between the age of 33-38 years, 22(20.0%) were between the age of 39-44 years while the remaining 12(10.9%) fell with the age range of 50 years and above.

RQ I: What are the purposes of use of ICT facilities by library personnel in university libraries in Ekiti State?

Table 3: Purpose of use of ICT facilities by library personnel in university libraries

| S/N | Items | SD F (%) | D F (%) | A F (%) | SA F (%) | \bar{x} |
|-----|---|----------------|---------------|---------------|----------------|-----------|
| 1. | It facilitates cooperation and formation of library network | 17 (15.5) | 0 (0.0) | 55 (50.0) | 38 (34.5) | 3.04 |
| 2. | It provides opportunity for me to effectively communicate with staff | 17 (15.5) | 0 (0.0) | 50 (45.5) | 43 (39.1) | 3.08 |
| 3. | To digitized local materials in the library | 12 (10.9) | 7 (6.4) | 56 (50.9) | 35 (31.8) | 3.04 |
| 4. | To effectively perform my professional duties | 6 (5.5) | 11 (10.0) | 43 (39.1) | 50 (45.5) | 3.25 |
| 5. | It provides the ability to search and combine data in many different ways | 16 (14.5) | 4 (3.6) | 51 (46.4) | 39 (35.5) | 3.03 |
| 6. | To render various library services to users with easy | 6 (5.5) | 3 (2.7) | 49 (44.5) | 52 (47.3) | 3.34 |
| 7. | To prepare official documents with ease | 14 (12.7) | | 61 (55.5) | 35 (31.8) | 3.06 |
| 8. | It facilitates easy communication with library users | 16 (14.5) | 8 (7.3) | 41 (37.3) | 45 (40.9) | 3.05 |
| 9. | To carry out academic research with ease | 6 (5.5) | 8 (7.3) | 53 (48.2) | 43 (39.1) | 3.21 |
| 10. | It helps to avoid duplication of effort in the library | 3 (2.7) | 15 (13.6) | 46 (41.8) | 46 (41.8) | 3.23 |
| 11. | To create awareness on new arrivals via social media to library users | 14 (12.7) | 7 (6.4) | 49 (44.5) | 40 (36.4) | 3.05 |
| 12. | To search for information and renders Internet services to users | 8 (7.3) | 11 (10.0) | 54 (49.1) | 37 (33.6) | 3.09 |

Source: Author's computation (2020)

Key: SA = Strongly Disagree, D = Disagree, A = Agree, Strongly Agree, F = Frequency; % = Percentage

Table 3 explains the purpose of use of ICT facilities by the library personnel in university libraries in Ekiti State. To render various library services to users with easy led with the mean (\bar{x}) of 3.34, followed by “To effectively perform my professional duties” (\bar{x} = 3.25), while “it helps to avoid duplication of effort in the library” has (\bar{x} = 3.23), according to the respondents. The least was recorded from “To digitized local materials in the library” and “It facilitates cooperation and formation of library network” with the mean score of 3.04 respectively.

RQ II: What are the ICT facilities used for service delivery in your university libraries in Ekiti State?

Table 4: ICT facilities used for Service Delivery in your University Libraries

| S/N | Items | NU | OU | HU | VHU | \bar{x} |
|-----|--|--------------|--------------|--------------|--------------|-----------|
| | | F (%) | F (%) | F (%) | F (%) | |
| 1. | Computer (Desktop, laptop, tablets, iPad) | 11 (10.0) | 3 (2.7) | 51 (46.4) | 45 (40.9) | 3.18 |
| 2. | Printers | 11 (10.0) | 3 (2.7) | 50 (45.5) | 46 (41.8) | 3.19 |
| 3. | Photocopier | 11 (10.0) | 3 (2.7) | 48 (43.6) | 48 (43.6) | 3.21 |
| 4. | Digital cameras | 7 (6.4) | 19 (17.3) | 51 (46.4) | 33 (30.0) | 3.00 |
| 5. | Scanners | 6 (5.5) | 7 (6.4) | 67 (60.9) | 30 (27.3) | 3.10 |
| 6. | Multimedia projectors | 15 (13.6) | 21 (19.1) | 39 (35.5) | 35 (31.8) | 2.85 |
| 7. | Blogging (e.g weblogs) | 30 (27.3) | 45 (40.9) | 26 (23.6) | 9 (8.2) | 2.13 |
| 8. | Audio/video sharing/ webcasting (Flickr, Skype, YouTube) | 34 (30.9) | 19 (17.3) | 35 (31.8) | 22 (20.0) | 2.41 |
| 9. | Email/instant messaging/chat | 10 (9.1) | 15 (13.6) | 57 (51.8) | 28 (25.5) | 2.94 |
| 10. | Discussion group (Google/Yahoo Group) | 32 (29.1) | 31 (28.2) | 23 (20.9) | 24 (21.8) | 2.35 |
| 11. | Listservs (Lisforum, Nmlis) | 54 (49.1) | 27 (24.5) | 16 (14.5) | 13 (11.8) | 1.89 |
| 12. | RSS feeds | 60 (54.5) | 19 (17.3) | 20 (18.2) | 11 (10.0) | 1.84 |
| 13. | Wikis (Wikipedia, LISWiki) | 51 (46.4) | 19 (17.3) | 29 (26.4) | 11 (10.0) | 2.00 |
| 14. | Social book marking/aggregating (Delicious, FriendFeed) | 45 (40.9) | 27 (24.5) | 23 (20.9) | 15 (13.6) | 2.07 |
| 15. | Social networking (Facebook, Twitter) | 22 (20.0) | 30 (27.3) | 37 (33.6) | 21 (19.1) | 2.52 |
| 16. | UPS | 32 (29.1) | 30 (27.3) | 23 (20.9) | 25 (22.7) | 2.37 |
| 17. | OPAC | 7 (6.4) | 11 (10.0) | 50 (45.5) | 42 (38.2) | 3.15 |
| 18. | Internet services | 3 (2.7) | 5 (4.5) | 76 (69.1) | 26 (23.6) | 3.14 |
| 19. | Databases | 8 (7.3) | 8 (7.3) | 67 (60.9) | 27 (24.5) | 3.03 |

Source: Author's computation (2020)

Key: VHU= Very Highly Utilised, HU= Highly Utilised, OU= Occasionally Utilised NU= Not Utilised; F = Frequency; % = Percentage, and \bar{x} = mean score

Table 4 shows the ICT facilities used for service delivery in the respondents' university libraries in Ekiti State as photocopier has (\bar{x} =3.21), printer (\bar{x} =3.19), computer (\bar{x} =3.18), OPAC (\bar{x} =3.15), Internet services (\bar{x} =3.14), scanners (\bar{x} =3.10), databases (\bar{x} =3.03), Email/instant

messaging/chat (\bar{x} =2.94), multimedia projector (\bar{x} =2.85), and social networking (\bar{x} =2.52). It was also indicated by the respondents that the less potent ICT facilities used are: RSS feeds (\bar{x} =1.84), listservs (\bar{x} =1.89), and wikis (Wikipedia, LISWiki) (\bar{x} =2.00).

RQ III: What is the frequency of use of ICT for service delivery by library personnel in university libraries in Ekiti State?

Table 5: Frequency of Use of ICT facilities for Service Delivery in University Libraries

| S/N | Items | N | M | W | D | \bar{x} |
|-------------------|--|--------------|--------------|--------------|--------------|-----------|
| | | F (%) | F (%) | F (%) | F (%) | |
| 1. | Computer (Desktop, laptop, tablets, iPad) | 17 (15.5) | 0 (0.0) | 30 (27.3) | 63 (57.3) | 3.26 |
| 2. | Printers | 9 (8.2) | 8 (7.3) | 43 (39.1) | 50 (45.5) | 3.22 |
| 3. | Photocopier | 3 (2.7) | 6 (5.5) | 32 (29.1) | 69 (62.7) | 3.52 |
| 4. | Digital cameras | 11 (10.0) | 13 (11.8) | 40 (36.4) | 46 (41.8) | 3.10 |
| 5. | Scanners | 5 (4.5) | 10 (9.1) | 48 (43.6) | 47 (42.7) | 3.25 |
| 6. | Multimedia projectors | 17 (15.5) | 12 (10.9) | 40 (36.4) | 41 (37.3) | 2.95 |
| 7. | Blogging (e.g weblogs) | 28 (25.5) | 20 (18.2) | 34 (30.9) | 28 (25.5) | 2.56 |
| 8. | Audio/video sharing/ webcasting (e.g Flickr, Skype, YouTube) | 31 (28.2) | 21 (19.1) | 33 (30.0) | 25 (22.7) | 2.47 |
| 9. | Email/instant messaging/chat | 16 (14.5) | 17 (15.5) | 41 (37.3) | 36 (32.7) | 2.88 |
| 10. | Discussion group (e.g Google/Yahoo Group) | 36 (32.7) | 25 (22.7) | 23 (20.9) | 26 (23.6) | 2.35 |
| 11. | Listsers (Lisforum, Nmlis) | 52 (47.3) | 25 (22.7) | 21 (19.1) | 12 (10.9) | 1.94 |
| 12. | RSS feeds | 53 (48.2) | 20 (18.2) | 30 (27.3) | 7 (6.4) | 1.92 |
| 13. | Wikis (Wikipedia, LISWiki) | 44 (40.0) | 31 (28.2) | 18 (16.4) | 17 (15.5) | 2.07 |
| 14. | Social book marking/aggregating (Delicious, FriendFeed) | 37 (33.6) | 41 (37.3) | 16 (14.5) | 16 (14.5) | 2.10 |
| 15. | Social networking (facebook, Twitter, weblog) | 44 (40.0) | 17 (15.5) | 28 (25.5) | 21 (19.1) | 2.24 |
| 16. | Content management systems (Drupal, weblog) | 35 (31.8) | 22 (20.0) | 29 (26.4) | 24 (21.8) | 2.38 |
| 17. | OPAC | 8 (7.3) | 14 (12.7) | 50 (45.5) | 38 (34.5) | 3.07 |
| 18. | Internet services | 14 (12.7) | 2 (1.8) | 62 (56.4) | 32 (29.1) | 3.02 |
| 19. | Databases | 9 (8.2) | 8 (7.3) | 61 (55.5) | 32 (29.1) | 3.05 |
| Grand Mean= 51.35 | | | | | | |

Source: Author's computation (2020)

Key: N= Never, M= Monthly, W= Weekly, D= Daily; F = Frequency; % = Percentage

Table 5 presents the frequency of use of ICT facilities for service delivery in university libraries. It was revealed that 62.7% of the respondents use photocopier, 57.3% use computer and 45.5% use printers on daily basis, while most of the respondents use the scanners, database and the Internet on weekly basis. Some of the ICT facilities are utilized both on daily and weekly basis. In order to establish the frequency of ICT use for service delivery in university libraries in Ekiti State, a test of norm was conducted. Considering the test of norm scale, which state that when the results (sum of the mean) is between the scale “1 – 31.67” mean value, this indicate that it is not used at all. The results between 31.68-63.33 means it is moderately/rarely used. When it falls between 63.64 – 95 mean values, it is highly/often used. The overall mean of ICT facilities use for service delivery in university libraries in Ekiti State from Table 5 above is “51.35” which falls between the scales “31.68-63.33”. This implied that the frequency of ICT facilities use for service delivery in university libraries in Ekiti State is moderate, that is rarely used.

RQ IV: What are the services delivered using information and communication technology by library personnel in university libraries in Ekiti State?

Table 6: Types of Service Delivered in University Libraries

| S/N | Items | ND | RD | HD | VHD | \bar{x} |
|-----|---|--------------|--------------|--------------|--------------|-----------|
| | | F (%) | F (%) | F (%) | F (%) | |
| 1. | Current awareness service | 12 (10.9) | 0 (0.0) | 51 (46.4) | 47 (42.7) | 3.21 |
| 2. | Selective Dissemination of Information | 3 (2.7) | 14 (12.7) | 57 (51.8) | 36 (32.7) | 3.15 |
| 3. | Circulation of new arrivals | 5 (4.5) | 6 (5.5) | 58 (52.7) | 41 (37.3) | 3.23 |
| 4 | Electronic document delivery | 11 (10.0) | 14 (12.7) | 42 (38.2) | 43 (39.1) | 3.06 |
| 5. | Multimedia services | 7 (6.4) | 17 (15.5) | 49 (44.5) | 37 (33.6) | 3.05 |
| 6. | CD/DVD based service | 5 (4.5) | 17 (15.5) | 49 (44.5) | 39 (35.5) | 3.11 |
| 7. | Web/Opac | 20 (18.2) | 4 (3.6) | 44 (40.0) | 42 (38.2) | 2.98 |
| 8. | Information provision on library website | 18 (16.4) | 11 (10.0) | 49 (44.5) | 32 (29.1) | 2.86 |
| 9. | Internet services | 21 (19.1) | 6 (5.5) | 44 (40.0) | 39 (35.5) | 2.92 |
| 10. | Assisting users to locate information not held in locally | 18 (16.4) | 10 (9.1) | 48 (43.6) | 34 (30.9) | 2.89 |
| 11. | Providing bibliographies of library holdings to users | 14 (12.7) | 7 (6.4) | 56 (50.9) | 33 (30.0) | 2.98 |
| 12. | Proving platform for research and | 11 | 23 | 39 | 37 | 2.93 |

| | | | | | | |
|-----|---|--------|--------|--------|--------|------|
| | communication through serials' services | | | | | |
| | | (10.0) | (20.9) | (35.5) | (33.6) | |
| 13. | Digitization of local resources | 18 | 25 | 41 | 26 | 2.68 |
| | | (16.4) | (22.7) | (37.3) | (23.6) | |
| 14. | Loan services | 18 | 20 | 34 | 38 | 2.84 |
| | | (16.4) | (18.2) | (30.9) | (34.5) | |
| 15. | Interlibrary loan | 26 | 22 | 34 | 28 | 2.58 |
| | | (23.6) | (20.0) | (30.9) | (25.5) | |
| 16. | Online reference services | 36 | 24 | 23 | 27 | 2.37 |
| | | (32.7) | (21.8) | (20.9) | (24.5) | |
| 17. | Consortia collaboration | 46 | 18 | 22 | 24 | 2.22 |
| | | (41.8) | (16.4) | (20.0) | (21.8) | |
| 18. | Indexing and abstracting | 29 | 31 | 26 | 24 | 2.41 |
| | | (26.4) | (28.2) | (23.6) | (21.8) | |
| 19. | user education | 20 | 11 | 60 | 19 | 2.71 |
| | | (18.2) | (10.0) | (54.5) | (17.3) | |
| 20. | Referral services | 14 | 18 | 58 | 20 | 2.76 |
| | | (12.7) | (16.4) | (52.7) | (18.2) | |
| 21. | Reprographic services | 22 | 12 | 55 | 21 | 2.68 |
| | | (20.0) | (10.9) | (50.0) | (19.1) | |
| 22. | Translation services | 20 | 9 | 64 | 14 | 2.67 |
| | | (18.7) | (8.4) | (59.8) | (13.1) | |

Source: Author's Computation (2020)

Key: *VHD= Very Highly Delivered, HD= Highly Delivered, RD= Rarely Delivered, ND= Not Delivered; F = Frequency; % = Percentage*

Table 6 showed the types of service delivered in university libraries in Ekiti State. Circulation of new arrivals services was the leading services delivered with mean of 3.23, followed by Current awareness with the mean of 3.21, and Selective Dissemination of Information ($x=3.15$). Based on this, it can be inferred that some of the types of services delivered in university libraries in Ekiti State include: circulation of new arrivals, current awareness service, selective dissemination of information, CD/DVD based service electronic document delivery, multimedia services, providing bibliographies of library holdings to users, web/OPAC, proving platform for research and communication through serials' services, Internet services, assisting users to locate information not held in locally among others.

Discussion of the findings

Findings from this study reveal that the use of information and communication technology in the university libraries in Ekiti State mostly enables the library personnel in rendering various library services to users with ease. This implies that the delivery of library service will be improved with greater efficiency. The library personnel also noted part of the purpose of using ICT tools is to effectively perform their professional duties which are among the primary reason for employing them in the library. Furthermore, other purposes of using ICT

are to help to avoid duplication of effort in the library, to carry out academic research with ease, to search for information and render Internet services to users, and to prepare official documents with ease, etc. Invariably, ICT will greatly simplify the acquisition, organization, storage, retrieval, provision, and usage of information and as well influenced access to a range of current information resources in university libraries. Aina (2004) posits that there is efficiency in resources organization as delivery and dissemination of information have become effective and easy. Repetitive and routine tasks in the library have been eliminated. Internet access enables libraries to locate information stored in other computers around the world on the web (websites). Digitization of library information resources, which converts print resources into electronic form, information can be accessed from anywhere at homes, offices, or any workstation connected to the Internet. ICT in university libraries in Nigeria is a way of improving on information services provided in libraries.

This study also shows that the ICT facilities used for service delivery in university libraries in Ekiti State include: photocopier, printer, computer, OPAC, Internet services, scanners, databases, email/instant messaging/chat, multimedia projector, social networking among others. This concord with Osuchukwu, Obuezie and Ogwuche (2017) findings, and the outcome of Akpoo (2019) on the ICT tools available in the library for library services. It also agrees with Adeniran et al. (2020) that carried out an investigation on uses and application of ICT using University of Nigeria Nsukka (UNN). Their findings showed that the facilities mostly used are OPAC, Internet and virtual library.

On the frequency of using of ICT facilities for service delivery in university libraries, it was revealed that photocopier, printers, and computer were mostly used on daily basis, with the scanners, while database and the Internet are mostly used on weekly basis. Some of the ICT facilities are utilized both on daily and weekly basis, while ICT facilities like RSS feed, Listservs, and Wiki are never used or utilized on monthly basis if used at all. In order word, the frequency of ICT use for service delivery in university libraries in Ekiti State is moderate, implying that it is not frequently used due to technological knowhow by library personnel. The findings agree with that of Osuchukwu, Obuezie and Ogwuche (2017) who stated that student utilized the ICT facilities and resources available frequently and to a very great extent. It is also in line with Aiyebilehin, Ikenwe, and Okpetu (2017) findings that discovered that library staff

used computers on daily basis, while computers connected to Internet, CD-ROM, OPACs, E-Books, and Printer are used on daily and weekly basis in the process of service delivery.

The study also discovered that circulation of new arrivals services was the leading services delivered, followed by current awareness, and the selective dissemination of information, among others, by staff of the libraries. While the consortium collaboration, online reference services, and interlibrary loan were not often rendered. This position is different from the findings of Fidelis (2018) who stated that virtual desk services are the services mostly performed by the staff, followed by provision of electronic resources and databases, and chat with a librarian. It did not also conform to the findings of Ivwighreghweta (2013) that the services and operations in library where ICT are mostly being used are in the area of acquisition of library materials, followed by the use of the Online Public Access Catalogue Services to their users. However, what is clear from the study is that the types of services delivered in university libraries in Ekiti State include: circulation of new arrivals, current awareness service, selective dissemination of information, CD/DVD based service electronic document delivery, multimedia services, providing bibliographies of library holdings to users, web/OPAC, proving platform for research and communication through serials' services, Internet services, assisting users to locate information not held in locally among others. This finding supports a study of Singh and Arora (2015), which investigated library services and their resources in the state of Haryana, India. It found out that all of the university libraries offered a range of services which included current awareness service, selective dissemination of information, photocopy service, bibliography service, document delivery service, interlibrary loan (ILL) service, reference service, circulation, membership, OPAC/Web OPAC services.

Conclusion

Service delivery by library personnel in university libraries is fundamental to the quality of university education. The objective of service delivery in university libraries is to ensure that the information needs of users are met through effective and efficient provision of information services and resources in the library, for research, learning, and teaching. The study aims to examine the use of information and communication technology as correlates of service delivery by library personnel in Ekiti State universities, Nigeria. Finding shows there are various and important reason of using ICT by library personnel in the libraries. The ICT facilities used for service delivery in university libraries in Ekiti State are photocopier, printer, computer, OPAC,

Internet services, scanners, databases, UPS, email/instant messaging/chat, multimedia projector, social networking among others, while the frequency of ICT use for service delivery in university libraries moderate. The study also discovered that circulation of new arrivals services was the leading services delivered, followed by current awareness, and the selective dissemination of information, among others, by staff of the libraries. In essence, the relevance of ICT in libraries cannot be ignored, as such, where ICT facilities are unavailable, much cannot be achieved in terms of quality service delivery by library personnel. This study resolved that the use of ICT facilities is germane to the quality of services delivered and there is a need for present-day library personnel to use ICT facilities to fulfill their professional obligations for effective service delivery.

Recommendations

Based on the findings, the following recommendations were made:

1. In order to boost and further improve the effective service delivery, more and up-to-date ICT facilities must be acquired and made available in the library.
2. To further improve the usage of ICT facilities, there is need for user orientation programmes by library management on the availability of ICT facilities, constant use of computer system and the Internet among academic librarians to enhance their proficiency.
3. In an attempt at improving the quality of service delivery among the library personnel, training and retraining of all categories of library staff should be organized on regular basis. The training should include needed skills and techniques for data input into the computer, internet surfing and using different telecommunication facilities to exchange information.
4. Further study could look at the impact of the application of ICT in library service delivery during crisis such as the COVID-19 pandemic, in Nigeria and other part of developing countries.

References

- Adebayo, J.O. and Mabawonku, I. (2017), “Perception and Practice of Information Ethics by Librarians in four Higher Institutions in Oyo State, Nigeria”, *Library Philosophy & Practice (e-journal)*. 1574. Pp. 1-31, available at: <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4530&context=libphilprac> (accessed 14 February 2021)
- Ademodi, D.T. and Adepoju, E.O. (2009), “Computer skill among librarians in academic libraries in Ondo and Ekiti State, Nigeria”, *Library Philosophy and Practice (e-journal)*, available at: <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1273&context=libphilprac> (accessed 10 June 2020)
- Adeniran, C.O., Nwalo, K.I.N., and Ajani, Y.A. (2020), “Application of Information and Communication Technology in Academic Libraries in Kwara State, Nigeria: Progress and Challenges”, *Middle Belt Journal of Library and Information Science*, Vol. 18.
- Agboola, B. and Shaibu, R. (2019), “Impact of ICT on information retrieval system in academic libraries: the experience of Federal University Gashua Library, Yobe State, Nigeria”, *Library Philosophy and Practice*, pp. 1-15, available at: <https://digitalcommons.unl.edu/libphilprac/2350> (accessed 12 February 2021)
- Agim, N.C., Iroze, P.C, Osuji, C.E., and Obasi-Haco, C. (2018), “Level of availability and utilization of ICT facilities by students: A case study of Federal Polytechnic Nekede, Owerri, Imo State, Nigeria”, *International Journal of Library and Information Studies*, Vol. 4 No. 3, pp. 26-39.
- Aina, L.O. (2004), “Coping with the challenges of library and information delivery services: The need for institutionalized professional development”, *Nigerian Library Association Conference Proceedings 2004*.
- Aiyebilehin, J.A., Ikenwe, I.J., and Okpetu, C. (2017), “Service Delivery by Librarians in University Libraries in Edo State”, *Journal of Applied Information Science and Technology*, Vol. 10 No. 2, pp. 42-48.
- Akpoo, B.V. (2019), *Application of Information and Communication Technology for effective Library Service delivery in academic libraries in Benue State, Nigeria*. Unpublished Thesis submitted to the Department of Educational Foundations and General Studies Federal University of Agriculture, Makurdi.
- Amuche, C.I. and Solomon, A.I. (2014), “An assessment of ICT competence among teachers of

- Federal Unity Colleges in North Central Geo-political of Nigeria”, *American International Journal of Research in Humanities, Arts and Social Sciences*, Vol. 2, available at: <http://iasir.net/AIJRHASSpapers/AIJRHASS14-158.pdf> (accessed 15 November 2019)
- Awotona, S.O. (2019), “Use of Information and Communication Technology by post basic Midwifery Students. A case study of Oyo state college of Nursing and Midwifery, Eleyele, Ibadan”, *Library Philosophy and Practice (e-journal)*, available at: <https://digitalcommons.unl.edu/libphilprac/229> (accessed 22 February 2021)
- Ayoku, O.A. and Okafor, V.N. (2015), “ICT skills acquisition and competencies of librarians”, *The Electronic Library*, Vol. 33 No. 3, pp. 502-523, available at: <http://dx.doi.org/10.1108/EL-08-2013-0155> (accessed 18 May 2019)
- Chukwueke, C. and Onuoha, J. (2019), “Emergent Trends in Library Services Delivery: The Application of Information and Communication Technologies in Academic Libraries”, *Library Philosophy and Practice (e-journal)*. 2602. available at: <https://digitalcommons.unl.edu/libphilprac/2602/> (accessed 20 May 2021)
- Davis, F.D., Bagozzi, P.R., and Warshaw, P. (1989), “User acceptance of computer technology: A comparison of two theoretical models”, *Management Science*, Vol. 35 No. 8, pp. 982-1003.
- Dhanavandan, S. and Tamizhchelvan, M. (2014). “Role of Information Technology in Academic Libraries: Personal Computers to Cloud Computing”. *International Journal of Advanced Library and Information Science*, Vol. 2 No. 1, pp. 62- 71.
- Ekere, J.N., Ewulum, O.E., Eze, M.E., Okpala, H.N., and Ebobo, M.E. (2019), “Utilization of Modern Technologies for Service Delivery in Special Libraries in South-East Nigeria”, *Information Impact: Journal of Information and Knowledge Management*, Vol.10 No. 2, pp.139-152.
- Enakrire, R. T. and Ocholla, D.N. (2017), “Information and communication technologies for knowledge management in academic libraries in Nigeria and South Africa”, *South African Journal of Information Management* Vol. 19 No. 1, pp. a750. <https://doi.org/10.4102/sajim.v19i1.750>
- Faboyinde, E.O. (2006), “The State of Information and Communication Technology (ICT) in Selected Libraries in Lagos and Ibadan Metropolis”, Paper presented at the 44th Annual

- Conference and Annual General Meeting of the Nigerian Library Association, Abuja: 61-68.
- Fidelis, A. (2018), "Usage of Information and Communication Technology to Support Innovative Library Services in Universities: A Case of the University of Dar es Salaam Wilbert Chagula Library", *University of Dar es Salaam Library Journal*, Vol. 13 No. 2, pp. 3-17.
- Haneefa, M. (2007), "Application of information and communication technologies in special libraries in Kerala (India)", *Library Review*, Vol. 56 No. 7, pp. 603–620.
- ICADL (2010), "The role of digital libraries in a time of global change", available at: <https://www.springer.com/gp/book/9783642136542> (accessed 27 June 2013)
- Ivwhighrehweta, O. (2013), "The Application of Information and Communication Technology on Academic Library Operations and Services in Nigeria", *International Journal of Digital Library Services*, Vol. 3 No. 1, pp. 12-22.
- Iyabode, M. O. (2015), "Availability and Use of Information and Communication Technology (ICT) Facilities by Staff of Tertiary Institutions' Libraries in Ondo and Ekiti States", *International Journal of Humanities and Cultural Studies*, Vol. 1 No. 4, pp.1-11. Available at: <http://ijhcschiefeditor.wix.com/ijhcs> (accessed 29 July 2021)
- Kodama, M. (2013), *Competing through ICT capability: Innovation in image communication*. Palgrave Macmillan, available at: <https://link.springer.com/book/10.1057%2F9781137286932> (accessed 23 June 2015)
- Mairaj, M.I. and El-hadi, W.M. (2012), "Applications of information and communication technologies in libraries in Pakistan", *Journal of Medical Library Association*, Vol. 100 No. 3, pp. 218–222, available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3411261/> (accessed 02 November 2021)
- Mbofung, U. and Popoola, S.O. (2014), "Legal and ethical issues of information service delivery and library information science professionals in university libraries in Nigeria", *Library Philosophy and Practice* (e-journal). available at: <http://digitalcommons.unl.edu/libphilprac/1183> (accessed 16 February 2021)
- Mommoh, R.L. and Emmanuel, V. (2019), "Library Staff Utilization of Information and Communication Technology (ICT) for Service Delivery in Special Libraries in North Central Nigeria", *Information Impact: Journal of Information and Knowledge*

- Management*, Vol. 10 No. 1, pp. 33-47, available at: <https://www.ajol.info/index.php/ijikm/article/view/188366> (accessed 16 February 2021)
- Nwankwo, N.G., Ismaila, O.S., Seimode, D.F., and Eda, R. (2020), “Information and Communication Technology (ICT) in Nigerian Libraries for Sustainable Development Goals (SDG)”, available at: <https://digitalcommons.unl.edu/libphilprac/4474/> (accessed 22 March 2021)
- Odionye, C.M. (2016), “Uses and application of ICTs in Nigerian University Libraries: The case of University of Nigeria Nsukka (UNN)”, *Research Journal of Mass Communication and Information Technology*, Vol. 2 No. 3, pp. 36-51.
- Ojedokun, A.A. and Victoria, N.O. (2015), “ICT skills acquisition and competencies of librarians”, *The Electronic Library*, Vol. 33 No. 3, pp. 502– 523, available at: <http://dx.doi.org/10.1108/EL-08-2013-0155> (accessed 18 February 2021)
- Onoriode, K., and Ivwighreghweta, O. (2011), “*Technologies for library automation: knowing the tool for library innovation*”, A paper presented at the NLA Delta Conference in Agbor.
- Osuchukwu, N.P., Obuezie, A.C. and Ogwuche, G.O. (2017), “Availability and utilization of Information Communication Technology facilities in a private university in Nigeria: A case study of Madonna University, Nigeria”, *Journal of Information and Knowledge Management*, Vol. 8 No. 3, pp. 16-25, available at: <https://dx.doi.org/10.4314/ijikm.v8i3.2> (accessed 03 December 2021)
- Oyedokun, T. T., Oyewumi, F. A., Akanbi, M. L., and Laaro, D. M. (2018), “Assessment of ICT Competencies of Library Staff in Selected Universities in Kwara State, Nigeria”, *Library Philosophy and Practice (e-journal)*. 1797, available at: <https://digitalcommons.unl.edu/libphilprac/1797> (accessed 12 February 2021)
- Sahin, I. (2006), “Detailed review of Rogers’ diffusion of innovations theory and educational technology-related studies based on Rogers’ theory”, *The Turkish Online Journal of Educational Technology*, Vol. 5 No. 3, pp. 14–23.
- Saini, O. (2014), “Document delivery service by Central Library, Babasaheb Bhimrao Ambedkar University luck now: A Study”, *Desidoc Journal of Library & Information Technology* Vol. 34 No. 5, pp. 435-439.

- Singh, K. (2013), "Impact of technology in library services. *International Journal of Management and Social Sciences Research*", Vol. 2 No. 4, pp. 74-76.
- Venkatesh, V., and Davis, F. D. (2000), "A theoretical extension of the technology acceptance model: Four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.
- Wawu, I.A. (2019), "Impact on ICT Utilization on Library Services in Academic Libraries", *Library Philosophy and Practice (e-journal)*. 3682, available at: <https://digitalcommons.unl.edu/libphilprac/3682> (accessed 19 May 2021)