

**CORRELATION BETWEEN INFORMATION AND COMMUNICATION TECHNOLOGY  
USE AND SERVICE DELIVERY BY LIBRARY STAFF IN FEDERAL UNIVERSITY  
LIBRARIES IN NORTHWEST, NIGERIA**

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**Abstract**

*The study examined the correlation between information and communication technology use and service delivery by library staff in Federal universities in NorthWest, Nigeria. The study covered five university libraries in NorthWest, Nigeria. They are; Ahmadu Bello University Zaria, Bayero University Kano, Usmanu Danfodiyo University Sokoto, Federal University Gusau, Zamfara and Federal University Birnin Kebbi. The objectives of the study were to know types of library services delivered with the use of ICT by library staff and the correlation between ICTs use and service delivery by library staff in Federal Universities in NorthWest, Nigeria. A correlational research design was used for the study. The population of the study comprised 760 library staff and the sample size are 153 population drawn from Federal University Libraries in NorthWest, Nigeria, simple random sampling technique was adopted. Questionnaire was used as the instrument for data collection in the study. The instrument was subjected to a content validity, with a hypothesis. Data collected were analyzed using descriptive statistics of frequency counts and percentages presented in tables, mean and standard deviation and Pearson Product Correlation Moment (PPMC) was used at 0.05 level of significant with the aid of Statistical Product and Service Solutions (SPSS) Version 20. The findings revealed that the types of library services delivered with the use of ICT by library staff were current awareness services, selective dissemination of information, reference services, internet service and so on. Conclusion first Based on the findings, it was recommended that management of the respective universities libraries should ensure to provide more ICTs equipment that will foster effective service delivery, alternative power supply like solar energy need to be provided to tackle power outage problem, staff need to be trained on ICT skills for full exploration for service delivery*

**Keywords:** Information and Communication Technology, Library Staff, Federal University Libraries.

### **Introduction**

The emergence of information and communication technology (ICT) has significantly grown and affected all sphere of human endeavors and library and information service delivery is not left behind. According to Sani, Tor and Mohammed (2019) this development of ICT has changed the role of traditional operation which has a potential force that globally transformed various facets of human endeavors. Achugbue, Uwaifo and Igun, (2015) posited that libraries have undergone a significant change in the past two decades due to the application of information technologies in automated cataloguing, circulation systems, online information retrieval, electronic document delivery and CD-ROM databases. Therefore, ICTs have become essential or indispensable tools in library operations. Unagha, Osuigwe and Ugocha (2014) remarked that the application of ICTs to library operations in this 21st Century has remained inevitable, incontestable and incontrovertible.

ICT is generic term that refers to technologies that are used to collect, store, edit and communicate information in various format (Raji 2018). Similarly, Aina, Okunnu and Dapo- Aina, Okunnu, & Dapo-Asaju (2014) postulated that ICT is a term used to describe the ability to access information with the use of telecommunication based internet resources. ICT offers the capacity to generate, arrange, control, and retrieve information swiftly from distant global locations (Quadri, Quadri & Oluwasina, 2015). It encompasses various technologies aimed at facilitating communication and information distribution. The utilization of ICT enhances the accessibility of digital information, diminishes the digital gap, and contributes to an enhanced quality of life. Integrating ICT into libraries serves as a means of enhancing the quality of information services provided in the library.

In today's fast-paced technological world, the efficiency and significance of any library and information center rely on the efficient delivery of high-quality services to users. Moreover, it hinges on recognizing and thoughtfully adjusting measures to meet societal needs while providing library and information services. In the realm of providing library services, the library staff's significance extends beyond just how services are delivered; it also influences how they are perceived by library users. Studies have demonstrated that library users and how they perceive and use library services are directly connected to how the staff handle the users as well as application of ICTs in libraries for effective services delivery (Otieno, Otike and Rotich, 2015); (Quadri, Quadri & Oluwasina, 2015).

In the contemporary world, the delivery of library and information services is undergoing a transformation, shifting away from traditional manual operations towards innovative technological methods. These modern technologies and communication tools are utilized to provide services to library patrons through various access channels, primarily utilizing a set of technologies known as the Internet. The internet, as a technology, has the potential to complement, reinforce, and enhance educational achievements for the benefit of all (Esew & Ikyembe, 2013).

According to Uganneya (2011), the effectiveness of library and information services hinge on a series of interconnected mechanisms. The author further asserts that these services encompass a range of unique activities, both collectively and individually, that play a role in generating and distributing information resources. Moreover, they establish the structure within which management shapes and enacts policies that impact library services.

In essence, library and information service delivery encompasses activities

involved in generating, preserving, and sharing knowledge, expertise, and tangible products, which are integral in defining modern technologies like the Internet and email (Akinyemi, Bakare Quadri, 2023). Onuoha, et al (2015) argued that if we must innovate and create avenues for successful change that will culminate in efficient library service delivery, we must embrace ICTs. The days of adhering to traditional library practices are in the past. To evolve the services we provide, we must begin by changing our professional mindset. The authors argued that a fundamental overhaul and modernization of library and information centers, along with their services, is imperative to align with the needs of today's societies. The conventional approaches and tactics for serving library users are no longer viable. To stay pertinent and uphold their role as information providers in a society that highly values information, library and information professionals must undertake a transformation of these facilities. In light of this that the present study aims to investigate the relationship between the use of information and communication technology and the provision of services by library staff in Federal Universities located in the NorthWest region of Nigeria.

### **Statement of the problem**

The emergence of ICTs have changed library and information services delivery from manual processes to mechanized and contemporary methods of operation. The use of ICT in libraries has led to significant enhancements and openings for providing services that are more efficient, effective, and current.

However, the researchers observed that most services delivery by library staff with the aid of ICT devices were observed not been used optimally and relatively low in usage due to power supply problem and there is limited research in the aspect of correlation between information and communication technology use and service delivery by library staff in majority of the Federal University libraries in NorthWest, Nigeria. To buttress this, a study carried out on application of information and communication technologies (ICTs) in academic library services delivery in Nigeria. The study focused on the Michael Okpara University of Agriculture, Umudike by Onuoha, Chikezie and Chukwueke (2019). The research identified the utilization of certain ICT tools such as computers, USB or Wi-Fi access, and CCTV, while other ICT tools like robots, visualizers, and tablet devices were not employed.

The level of ICT application in library service delivery was determined to be relatively limited (Ashiru, Adegboro, Awujoola and Bayowa, 2022). Consequently, questions arise regarding the potential connection between the use of ICTs and the service delivery by library staff in federal university libraries located in NorthWest, Nigeria. Based on these initial observations and the backing from existing literature, the researcher aims to investigate the correlation between the utilization of information and communication technology and the service delivery by library staff in Federal Universities in NorthWest, Nigeria.

### **Objectives of the study**

The study was guided by the following objectives, that is, to determine:

1. The types of library services delivered with the use of ICT by library staff in federal universities in NorthWest, Nigeria.
2. The correlation between ICTs use and service delivery by library staff in federal universities in NorthWest, Nigeria

### **Research questions**

This research questions sought to answer the following:

1. What are the types of library services delivered with the use of ICT by library staff in federal universities in NorthWest, Nigeria?
2. What is the correlation between ICTs use and service delivery by library staff in federal universities in NorthWest, Nigeria?

### **Research hypothesis**

This research tested the null hypothesis below:

**Ho<sub>1</sub>:** There is no significant relationship between ICT use and service delivery by library staff in federal universities in NorthWest, Nigeria.

### **Literature review**

The emergence of ICT has undeniably been a boon for library services, enabling many librarians to harness their ICT capabilities to connect with library users. Chisenga (2014) has identified several ICT-based services that libraries offer, including:

1. **Web Access to OPAC:** Libraries are now offering web-based access to their Online Public Access Catalog (OPAC) interfaces. These OPAC systems simplify users' access to and utilization of information resources. Essentially, OPAC serves as the digital form of a library catalog, facilitating users' retrieval of materials within the library (Afolabi & Abidoye, 2012).
  2. **Electronic Document Delivery:** Libraries have put in place ICT-based interlibrary lending systems that deliver publications via electronic networks. Libraries can receive copies of research papers or other research documents from other libraries via the Document Delivery Service (DDS). These files are often sent straight to the desktop computers of library patrons in portable document format (PDF).
  3. **Online Instruction/User Education:** Libraries have launched online user education and bibliographic initiatives, such as virtual tours of library holdings and online tutorials for doing online resource searches. For user education, libraries can also use the internet or CD-ROMs.
  4. **Online Readers Advisory Services:** Libraries increasingly provide online versions of readers' advisory services that notify customers about recent purchases, offer evaluations and recommendations, and do much more.
  5. **Networked Information Resources:** Users now have access to databases, electronic scholarly journals, electronic books and numerous publications from multiple publishers thanks to libraries' networked information resources (Alasa & Quadri, 2022).
- Depending on the type of library, the type of users, and the goals of the parent

institutions, different services are provided in different libraries. Other services offered by libraries, as noted by Idowu (2011), include:

- i. Reference Service
- ii. Borrowing, Renewing and Reserving
- iii. Computerized Interactive Search
- iv. Serials Control
- v. Technical Services
- vi. Exhibition and Display
- vii. Reprographic Service
- viii. Selective Dissemination of Information (SDI)
- ix. Current Awareness Services (CAS)

**i. Reprographic Technology:** Reprographic technology is widely utilized in libraries worldwide. Libraries furnish reprographic machines to facilitate on-demand document photocopying.

**ii. Library Retrieval System:** This involves the use of Compact Disc Read-Only Memory (CD-ROM) technology as a way to obtain specialized CD-ROM databases across a variety of areas, including law, sciences, medicine, technology, agriculture, and more.

**iii. Indexing and Abstracting Services:** This service entails the creation of document summaries and the assignment of descriptors to facilitate document referencing.

**iv. Institutional Repositories:** Institutional repositories act as online libraries for gathering, conserving, and sharing digital versions of the intellectual output of academic or research institutions. Journal articles and electronic theses and dissertations are included in this. Typically, university and research libraries provide this service.

**v. Document Scanning Services:** Tools like scanners are essential for updating libraries. They play a crucial role in the scanning of text, photos, and content pages from books, offering crucial support for creating digital and virtual libraries.

Norliya (2009) conducted a study and emphasized the importance for university libraries to adopt strategic planning in the creation and provision of services that align with user satisfaction, which plays a crucial role. The study also discovered that, on average, respondents expressed a reasonable level of satisfaction with the library's collection, infrastructure, physical space, and the services it offers.

Adeniran (2011) investigated user satisfaction with academic library services, considering the perspectives of academic staff and students. The study's findings revealed that user satisfaction depends on both the quality of the library's staff and the services provided. Additionally, the research showed that the availability of relevant information materials, accessible points of entry, and conducive learning, teaching, and research environments contribute to increased library usage.

Agoh and Omekwu (2021) aimed to investigate how researchers perceive the

connection between the delivery of library and information services and their scholarly communication outputs in four libraries situated in National Agricultural Research Institutes in North-Central Nigeria. These library and information services encompassed Circulation Services (CS), Internet Services (IS), Selective Dissemination of Information (SDI), Inter-Library Loan Services (ILLS), Reference Services (RS), and Current Awareness Services (CAS). The research followed a correlation survey design and was guided by six hypotheses. The study gathered data through surveys from a group of 820 participants, who were selected from a total population of 1,642 researchers working in agricultural research institutes.

To examine the hypotheses, the Pearson Product-Moment Correlation Coefficient (PPMCC) was utilized. The study's results revealed that there is a positive and statistically significant correlation between researchers' scholarly communication outputs and all six library and information services (ILLS, CS, IS, CAS, RS, and SDI) in Agricultural Research Institutes located in North Central Nigeria. The study concluded by advising administrators of Agricultural Research Institutes to devote more financial, human, and material resources to improving current service delivery to researchers, highlighting the library's crucial function in supplying accurate information in the right format and at the right time.

In the 20th century, library services were primarily reactive, meaning they were provided in response to specific requests from library users. However, as we entered the 21st century, library services have evolved to become more proactive. They are now not only offered upon users' requests but are also initiated by library staff themselves. The influence of ICT is evident in enhancing the efficiency and effectiveness of these services, managing the rapid expansion of information resources, and facilitating collaboration, among other aspects. ICT has not only transformed but also had a significant impact on library services across various domains (Ansari, 2003):

**i. Document Formats:** Books, periodicals, and similar materials are now accessible in digital formats, thanks to technology. This digital conversion of printed materials ensures their preservation for future use.

**ii. Operational Processes:** ICT has had a profound impact on various library operations, encompassing tasks such as circulation control, acquisition, cataloging, and serials management. The automation of these activities has significantly improved their efficiency and effectiveness, particularly expediting routine procedures like document borrowing and return.

**iii. Library's Online Catalog (OPAC):** The library's Online Public Access Catalog (OPAC) facilitates access to information retrieval technologies. It may be effortlessly linked into the library's website, providing users with global access to the library's substantial databases.

**iv. Administrative Functions:** Information technology has assumed a critical role in managing library resources, including tasks like inventory management and financial operations.

**v. User Interaction:** ICT has revolutionized user orientation activities, benefiting

library patrons by expediting interactions between users and librarians or information professionals. This transformation has made library resources and services more accessible.

**vi. Access to Information Resources:** ICT has expanded the avenues through which users can access library and information resources. It facilitates online, convenient, and continuous access, accommodating multiple users, and encompassing the entire collection, including electronic resources.

**vii. Online Database Access:** In response to the demands of tech-savvy users, ICT has simplified access to a wealth of electronic databases, spanning both bibliographic and full-text sources. Web-enabled databases are readily accessible from users' desktops and various devices.

**viii. Current Awareness Services:** By combining existing knowledge resources with internet data, libraries can now provide current awareness services. These services are adaptable to match consumer preferences.

**ix. Library Networking:** ICT has empowered the establishment of diverse library and other networks, such as DELNET, INFLIBNET, ERNET, NICNET, INDEST, UGC-INFONET, and others. These networks have expanded library cooperation, facilitated resource sharing, and promoted library consortia, thereby enhancing collaborative mechanisms among libraries.

#### **Level of correlation on ICT use and service delivery**

Unobe, Yusufu, and Shehu (2015) conducted a study on medical libraries at federal universities in Nigeria's NorthWest geo-political zone used internet information sources. The study used a survey research methodology and included 3,545 respondents in total. A proportional stratified technique was used to choose responses, yielding 405 individuals out of a total of 3,545. There were 405 questionnaires administered, and 374 of them were completed and returned. Closed-ended questionnaires were used to collect the data, and they were divided into sections for users and employees. The results of the study showed that there were insufficient accommodations for online information sources, such as online databases and electronic alerts, which led to their underuse. Given these conclusions, the study suggested that medical libraries should upgrade its infrastructure to encourage the use of online information sources.

The impact of ICT on the teaching and learning of library and information science inside higher institutions in Rivers State was the focus of a different study done by Okpokwasili (2018). The three institutions in the area that offer this programme are Rivers State University, Captain Elechi Amadi Polytechnic, and Ignatius Ajuru University of Education. The research used a correlational research methodology. About 422 made up the study's total population, and a purposive sampling method was used to draw samples from the entire community.

The research tool, "Influence of ICT on Teaching and Learning Library and

Information Science (IICTTALLIS)," employed a five-point scale with Very High Level of Influence and Very Low Level of Influence as the extremes. Four hundred and twenty-two (422) copies of the questionnaire were administered and face-to-face interviews, 340 were successfully retrieved. The analysis employed the arithmetic mean to address the study's questions, and the standard deviation was utilized to assess how closely the scores clustered around the means. The Pearson Product Moment Correlation (r) was used to evaluate two hypotheses, with any projected grand mean above 3.0 being accepted and any mean below 3.0 being rejected as a deciding factor.

The study found that ICT significantly affected how library and information science was taught and learned. A high level of ICT competence was also shown by aspiring library and information science professionals, particularly in the development of OPACs, networking, resource sharing, institutional repositories, computer skills (including hardware, system software, and application software), general-purpose programming, database management systems, webpage development, and content management. The study came to the conclusion that more ICT skills courses should be included to the library and information science curricula and emphasized how crucial it is for students to develop practical ICT skills in order to get ready for careers as future library and information science professionals.

Umeji, Efe, and Lucky (2013) have highlighted the ways in which ICT can impact libraries as follows:

- 1. Development of OPAC:** The Online Public Access Catalog (OPAC) represents a computerized version of a library's catalog, which lists its holdings. OPAC offers user-friendly accessibility, space-saving advantages, and the ability to access catalogs from other libraries.
  
- 2. Networking Capabilities:** ICT empowers libraries to establish networks, whether on a local (LAN) or wide (WAN) scale. These networks enable libraries to access a wide array of online databases spanning various disciplines, including online magazines, newspapers, e-journals, and e-books.
  
- 3. Facilitating Resource Sharing:** ICT can help create a centralized union catalog that will allow libraries to successfully collaborate and share their resources.
  
- 4. Institutional Repositories:** These archives collect academic works such as theses, dissertations, conference papers, seminar papers, curriculum vitae, reports, opening speeches, and other scholarly works written by academics who are affiliated with a certain academic institution. ICT makes it easier for other libraries to access this treasure of knowledge.
  
- 5. Library Electronic Security System:** By utilizing Radio Frequency Identification Detector (RFID) technology, ICT improves library security. RFID is a cutting-edge method of detecting theft in libraries as it combines radio frequency and microchip technologies.
  
- 6. Establishment of Virtual Libraries:** ICT promotes the creation of virtual libraries, expanding the reach and accessibility of library resources in the digital realm.



**Methodology**

Quantitative research methodology was employed using correlational research design for the study. The correlational research design was found appropriate because this research determined the relationship between ICT use and service delivery. The population is 760 library staff and the sample size of 153. Data for the investigation were gathered using a self-designed questionnaire. The data was analyzed using descriptive statistics in the forms of percentage scores, frequency distributions, mean and standard deviation was used. The data collected were analyzed using the statistical product and service solutions (SPSS) to ensure accuracy. Pearson Product Correlation Moment (PPMC) analysis was chosen to test the hypothesis and determining the relationship between ICTs use and service delivery by library staff in federal universities in NorthWest, Nigeria.

**Table 1: Distribution of the population**

| Institutions                        | No. of Library Sta □ | Sample Size |
|-------------------------------------|----------------------|-------------|
| Ahmadu Bello University, Zaria      | 471                  | 94          |
| Bayero University Kano, Kano State  | 126                  | 25          |
| Federal University Birnin Kebbi     | 34                   | 7           |
| Federal University Gusau, Zamfara   | 21                   | 5           |
| Usmanu Danfodiyo University, Sokoto | 108                  | 22          |
| <b>Total</b>                        | <b>760</b>           | <b>153</b>  |

**Findings and discussion**

A total of one hundred and fifty-three (153) copies of the questionnaire were administered to the library staff in the five university libraries under study; Ahmadu Bello University Zaria, Bayero University, Kano, Federal University Birnin Kebbi, Federal University Gusau, and Usmanu Danfodiyo University, Sokoto out of which 134 (88%) copies were duly completed, retrieved and found useful for analysis. The distribution of the response rate is shown in Table 2.

**Table 2: Response Rate**

| S/N | Universities                       | CQA        | %          | CQR        | %         |
|-----|------------------------------------|------------|------------|------------|-----------|
| 1.  | Ahmadu Bello University            | 94         | 61         | 79         | 84        |
| 2.  | Bayero University Kano             | 25         | 16         | 24         | 96        |
| 3.  | Federal University Birnin Kebbi    | 7          | 5          | 7          | 100       |
| 4.  | Federal University Gusau           | 5          | 4          | 5          | 100       |
| 5.  | Usmanu Danfodiyo University Sokoto | 22         | 14         | 19         | 86        |
|     | <b>Total</b>                       | <b>153</b> | <b>100</b> | <b>134</b> | <b>88</b> |

**KEY:** (CQA) Copies Questionnaire Administered, (CQR) Copies Questionnaire Retrieved, (%) Percentage

Table 2 Shows that Ahmadu Bello University, Zaria has 94 copies of the questionnaire administered and 79(59%); in Bayero University, Kano, 25 copies were administered while 24 (18%); were retrieved, Federal University Birnin Kebbi 7 copies distributed and 7 (5%); were all retrieved. In Federal University Gusau 5 copies were distributed 5 (4%) were retrieved and in Usmanu Danfodiyo University, Sokoto 22 were distributed and 19 (14%) were retrieved. Thus 153 copies of the questionnaire were administered to the library staff in these university libraries and the total returned were 134 (88%) copies. The high response rate is attributed to the period the researcher spent in monitoring the respondents to complete the questionnaire and with the help of research assistants that played vital role in the exercise.

The first research question sought to find out the types of library services delivered with the use of ICT by library staff. The responses are provided in table 3 below.

**Table 3: Types of library services delivered by library staff with the use of ICT in the Federal Universities in NorthWest**

| S/N   | Types of library services                        | Universities |      |     |      |      |     |       |     |      |     | Total |      |
|---|--|--------------|------|-----|------|------|-----|-------|-----|------|-----|-------|------|
|   |  | ABU          |      | BUK |      | FUBK |     | FUGUS |     | UDUS |     |       |      |
|   |  | F            | %    | F   | %    | F    | %   | F     | %   | F    | %   | F     | %    |
| 1   | Current Awareness Services                       | 59           | 44.0 | 23  | 17.2 | 7    | 5.2 | 5     | 3.7 | 12   | 9.0 | 106   | 79.1 |
| 2   | Selective Dissemination of Information           | 54           | 40.3 | 23  | 17.2 | 7    | 5.2 | 5     | 3.7 | 9    | 6.7 | 98    | 73.1 |
| 3   | Reference Services                               | 60           | 44.8 | 23  | 17.2 | 4    | 3.0 | 5     | 3.7 | 10   | 7.5 | 102   | 76.2 |
| 4   | Inter Library Loan                               | 32           | 23.9 | 15  | 11.2 | 1    | 0.8 | 4     | 3.0 | 7    | 5.2 | 59    | 44.1 |
| 5   | Internet Services                                | 63           | 47.1 | 21  | 15.7 | 5    | 3.7 | 5     | 3.7 | 12   | 9.0 | 106   | 79.2 |
| 6   | Circulation Services                             | 40           | 29.9 | 20  | 14.9 | 5    | 3.7 | 5     | 3.7 | 8    | 6.0 | 78    | 58.2 |
| 7   | Web-based online Public Access Catalogue Service | 47           | 35.1 | 17  | 12.7 | 5    | 3.7 | 3     | 2.2 | 6    | 4.5 | 78    | 58.2 |
| <b>Key: Frequency (F), Percentage (%) &amp; Total (T)</b> |  | 47           | 35.1 | 15  | 11.2 | 2    | 1.5 | 2     | 1.5 | 5    | 3.7 | 71    | 53.0 |

Considering a minimum threshold of 50% and above, table 3 revealed that the types of library services delivered by library staff with the use of ICT in Federal Universities in NorthWest, Nigeria were current awareness services, selective dissemination of information, reference services, internet services, circulation services, web-online public access catalogue service and electronic resource sharing with the percentage scores of 79.1%, 73.1%, 76.2%, 79.2%, 58.2%, 58.2% and 53.0% respectively while inter-library loan services scored below the benchmark which is 44.1% in all the Federal university libraries in North-West, Nigeria.

Therefore, the above findings show the types of library services delivered by library staff with the use of ICT in all the Federal university libraries in North-West, Nigeria.

The second research question was formulated to determine the level of correlation on ICT use and service delivery by library staff. The responses were provided in table 4.

**Table 4: Level of correlation between ICT use and service delivery by library staff in Federal Universities in NorthWest**

| S/N | Correlation of ICT Use                            | ABE |    |   |   |   | BOK |    |   |   |   | FUBK |   |   |   |   | FUGUS |   |   |   |   | UDUS |   |   |   |   | M | SD   | D    |   |
|-----|---|-----|----|---|---|---|-----|----|---|---|---|------|---|---|---|---|-------|---|---|---|---|------|---|---|---|---|---|------|------|---|
|     |   | H   | M  | F | N | U | H   | M  | F | N | U | H    | M | F | N | U | H     | M | F | N | U | H    | M | F | N | U |   |      |      |   |
| 1   | Current Awareness Services                        | 42  | 24 | 7 | 1 | 5 | 14  | 6  | 1 | 1 | 2 | 3    | 1 | 1 | 1 | 1 | 1     | 1 | 1 | 1 | 1 | 1    | 6 | 7 | 1 | 1 | 4 | 2.41 | 0.53 | R |
| 2   | Selective Dissemination of Information            | 33  | 31 | 5 | 0 | 1 | 8   | 12 | 3 | 0 | 1 | 1    | 5 | 1 | 1 | 1 | 1     | 1 | 1 | 1 | 1 | 1    | 6 | 7 | 2 | 1 | 3 | 2.51 | 0.76 | R |
| 3   | Reference Services                                | 40  | 28 | 1 | 2 | 5 | 14  | 3  | 1 | 1 | 3 | 3    | 0 | 0 | 1 | 0 | 0     | 4 | 1 | 0 | 0 | 0    | 2 | 9 | 3 | 4 | 5 | 2.48 | 0.65 | R |
| 4   | Inter Library Loan                                | 17  | 20 | 1 | 8 | 1 | 3   | 10 | 3 | 4 | 2 | 0    | 0 | 3 | 0 | 2 | 0     | 9 | 5 | 0 | 0 | 0    | 2 | 6 | 5 | 1 | 3 | 2.90 | 1.27 | R |
| 5   | Internet Services                                 | 19  | 20 | 3 | 4 | 8 | 14  | 7  | 1 | 4 | 4 | 2    | 0 | 3 | 2 | 0 | 0     | 0 | 4 | 1 | 0 | 0    | 7 | 7 | 1 | 0 | 4 | 2.47 | 0.89 | R |
| 6   | Circulation Services                              | 30  | 32 | 5 | 4 | 8 | 7   | 9  | 4 | 2 | 2 | 1    | 1 | 0 | 4 | 1 | 0     | 4 | 1 | 0 | 0 | 0    | 5 | 9 | 2 | 0 | 3 | 2.69 | 0.91 | R |
| 7   | Web-Based Online Public Access Catalogue Services | 28  | 29 | 0 | 5 | 8 | 10  | 8  | 3 | 1 | 5 | 2    | 3 | 0 | 0 | 0 | 0     | 5 | 0 | 0 | 0 | 0    | 4 | 7 | 3 | 1 | 5 | 2.70 | 0.98 | R |
| 8   | E-Resource Sharing                                | 17  | 28 | 3 | 6 | 1 | 0   | 12 | 6 | 1 | 2 | 3    | 0 | 5 | 0 | 0 | 0     | 2 | 9 | 1 | 1 | 0    | 0 | 5 | 1 | 1 | 8 | 2.61 | 1.05 | R |

**Key:** HC=High Correlation; MC=Moderate Correlation; FC=Fair Correlation; NC=No Correlation; UD=Undecided; T=Total; M= Mean; SD= Standard Deviation; D=Decision; A=Accepted; R=Rejected

Table 4 shows the level of correlation on ICTs use and service delivery by library staff in Federal university libraries under study in North-West, Nigeria: Current Awareness Services with mean value of 2.41; followed by Selective Dissemination of Information with mean value of 2.51; Reference Services with mean value of 2.48; Inter Library Loan with Mean value of 2.90; Internet Services with Mean value 2.47; Circulation Services with Mean value of is 2.69; Web-Based Online Public Access Catalogue Services with Mean value of 2.70 and E-Resource Sharing with mean value of 2.61. They are all below the value threshold of 3.0 which implies that all were rejected. Arising from the result, it can be inferred that there is no correlation between ICTs use and service deliver. Hence, the implication of this finding is that ICT use do not have much correlation on service delivery by library staff in Federal university libraries under study in North-West, Nigeria.

**Hypothesis**

**Ho<sub>1</sub>:** There is no significant relationship between information and communication technology use and service delivery by library staff in Federal Universities in NorthWest, Nigeria.

**Table 5:** Result of hypothesis testing

|                  |                     | ICT USE | SERVICE DELIVERY |
|------------------|---------------------|---------|------------------|
| ICT USE          | Pearson Correlation | 1       | .501**           |
|                  | Sig. (2-tailed)     |         | .000             |
|                  | N                   | 134     | 134              |
| SERVICE DELIVERY | Pearson Correlation | .501**  | 1                |
|                  | Sig. (2-tailed)     | .000    |                  |
|                  | N                   | 134     | 134              |

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

indicates there is significant relationship between ICT use and service delivery in federal university libraries under study in NorthWest, Nigeria. Therefore, Pearson product correlation of ICT use and service delivery was found to be moderately positive and statistically significant ( $r = .501, p < .005$ ) in federal university libraries under study in NorthWest, Nigeria.

### Conclusion and Recommendations

Based on the data collected and analyzed, the following are the findings of this study: From the study it could be concluded that the types of library services delivered with the use of ICT by library staff in federal universities in NorthWest, Nigeria were: current awareness services, selective dissemination of information, reference services, internet services, circulation services, web-online public access catalogue service and electronic resource sharing and the level of correlation on ICT use and service delivery by library staff in federal universities in NorthWest, Nigeria is moderate. In line with the findings of this study, the following recommendations were made:

1. For effective service delivery using ICT there should be in-house training for library staff to update their ICT skills.
2. The library management needs to make more effort on ICTs use for service delivery by library staff.

The university library management should formulate functional policy geared towards improving ICT application for effective services delivery in the sampled libraries.

### References

- Achugbue, I. E., Uwaifo, S.O. & Igun, S. E. (2015). Librarians Knowledge of Information and Communication Technology Hardware Usage in University Libraries in South South and South West, Nigeria, *Information and Knowledge Management International Institute for Science, Technology & Education* <https://iiste.org/Journals/index.php/IKM/article/viewFile/46661/48179> 2:43-49
- Ashiru, B. B., Adegboye, M., Awujoola, O. A., & Bayowa, O. O. (2022). Electronic information resources use, quality reference service delivery and academic performance of final year students in colleges of education in Lagos state, Nigeria. *Library Philosophy & Practice*.
- Adeniran, P. (2011). User Satisfaction with Academic Libraries Services: Academic Staff and Students Perspective. *International Journal of Library and Information Science*, 3(10), 209-216.
- Afolabi, A.F., & Abidoye J.A. (2012). The Integration of Information and Communication Technology in Library Operations Toward Effective Library Services. *Proceeding of 1<sup>st</sup> International Technology, Education and Environment Conference at African Society for Scientific Research (ASSR)*.
- Agoh, A. J. and Omekwu, C. O. (2021). Library and Information Services Delivery and Researchers' Scholarly Communication Outputs in Agricultural Research Institutes in North-Central, Nigeria. *International Journal of Library and Information Science Studies* 7(1):9-24, 2021
- Akinyemi, O. E., Bakare, O. D. & Quadri, G. O. (2023). Human capital development and services delivery by library personnel in university libraries in Ondo State, Nigeria. *Nigerian School Library Journal*, 22(1): 67-81.
- Aina, A.J., Okunnu, H.O., & Dapo-Asaju, H.S. (2014). ICT Integration for Sustainable Development of Nigeria Academic Libraries: Issues and Challenges. *International Journal of Information Research*. 3(4): 334-345.
- Ansari, M.A (2003). Digital Libraries: Needs, Technology and Benefit. *Indian Library Association Bulletin (ILA)*, 38 (3): 22-26.

- Chissenga, J. (2014). ICT in Libraries: An Overview and General Introduction to ICT in Libraries in Africa. *A paper presented at INASP ICT workshop held at Johannesburg, South- Africa*. Retrieved from [www.inasp.info/ISP/ICT-workshop-2004/sectionalchisenga.ppt](http://www.inasp.info/ISP/ICT-workshop-2004/sectionalchisenga.ppt)
- Esew, M. and Ikyembe, P.B.T. (2013). "ICT and Transformation of Nigerian Libraries in Enhancing Educational Development in Academic Institutions: Challenges and Solutions. *Information and Knowledge Management*. Vol. 3, No. 12, pp53-58.
- Idowu, A.O. (2011). Effective Library Services in the College. *A paper Delivered at the 1st Library Workshop at Adeyemi College of Education, Ondo International Journal of Research - Granthaalayah*, 4(9): 97-100
- Norliya, A. K. (2009). Evaluating Users' Satisfaction on Academic Library Performance. *Malaysian Journal of Library and Information Science*, 14(2), 101-115.
- Okpokwasili, N. P. (2018). Influence of ICT on Teaching and Learning of Library and Information Science in Rivers State Higher Institutions. *International Journal of Innovative Information Systems & Technology Research* 6(3):6-15,
- Onuoha, C., Anyanwu, E.U., Ossai-Onah, O. V. & Amaechi, N.M. (2015). Challenges of Promoting Innovation and Creativity Among Library and Information Science Professionals in Nigeria: The Experience of Selected Libraries in Imo State, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 6(1) 25-30.
- Onuoha, J. Chukwuemeka C. & Chikezie, A.N. (2019). Application of Information and Communication Technologies (ICTs) in Academic Library Services Delivery in Nigeria: A Study of Michael Okpara University of Agriculture, Umudike (MOUUAU) Library
- Otieno, P. O., Otike, J., & Rotich, D. (2015). The Effect of Library Staff Attitude to Work on the Use of Information Services in Public University Libraries in Kenya. *Asia Pacific Journal of Education, Arts and Sciences*, 2(4), 19. Retrieved from <http://oaji.net/articles/2021/1710-1465284458.pdf>
- Quadri, M. O., Quadri, G. O. & Oluwasina, O. O. (2015). Information and communication technology (ICT) application in library services: a comparative study of two Nigerian Universities. *Journal of Applied Information Science and Technology*, 8(2): 35-41.
- Raji, S.K. (2018). The Role of ICT as a Panacea for National Development. Retrieved from [www.nacoss.or.ng](http://www.nacoss.or.ng).
- Sani, M.R., Tor, S.F. & Mohammed, M.F. (2019). Assessment of ICT Competencies and Use of Electronic Information Resources by Lecturers in Universities in Benue State, Nigeria. *International Journal of Information and Management Sciences*. Vol. 1, No. 1
- Uganneya, S.A. (2011). Information Service Provision and User Satisfaction in Agriculture Research Libraries in Nigeria. Unpublished Ph.D. Thesis, University of Nigeria Nsukka. 225.
- Umeji, E. C., Efe, F. E., Lucky, U. O. (2013). Information/ ICT Literacy Level and Skills among Librarians in Madonna University Library. Okija. *Journal of Humanities and Social Sciences (IOSR-JHSS)*, 15(Sept-Oct): 70-75
- Unagha, A., Osuigwe, N. & Ugocha, O. (2014). Information and Communication Technology (ICT) Skills for Human Resources Development in Nigerian University Libraries. *Library and Information Science Digest: Journal of the Nigerian Library Association*, Anambra State Chapter. 7 (1), 2014. 13 – 21.
- Unobe, E.S., Yusufu, A., & Shehu, N. (2015). Use of Online Information Sources in Federal University Medical Libraries in North West Geo-Political Zone of Nigeria. *The Information Manager Journal* Vol. 15(1&2) 63-69 Retrieved from [www.ajol.info/index.php/tim/issue/view/14738](http://www.ajol.info/index.php/tim/issue/view/14738)