

**APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES BY
LIBRARIANS FOR EFFECTIVE SERVICE DELIVERY IN JOSEPH SARWUAN
TARKA UNIVERSITY LIBRARY, MAKURDI, BENUE STATE**

By

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Abstract

This study examined the application of information and communication technology for effective library services delivery among Professional librarians in Joseph Sarwuan Tarka University Makurdi, Benue State. The study adopted survey research design; questionnaire was used as the primary instrument for data collection on the application of information and communication technology for effective library services delivery among librarians in Joseph Sarwuan Tarka University Makurdi Benue State. The population for the study comprises of 46 professional librarians. Census sampling method was used to sample all the professional librarian. The data collected were analyzed using means, tables and standard deviations. Findings of the study revealed that that access to information and communication technology resources in Joseph Sarwuan Tarka University Makurdi is to a Low extent, librarians utilize information and communication technology resources in Joseph Sarwuan Tarka University Makurdi to a high extent and effective application of information and communication technology resources influences library service delivery among professional librarians in Federal University of Agriculture Makurdi. The study however recommended that: the management of Joseph Sarwuan Tarka University Makurdi should subscribe to online databases to enable staff of the library, have access to more current information that will improve on their services delivery to its users.

Keywords: Application, Information and Communication Technology, Effective Library Services Delivery, Professional Librarians, University.

Introduction

Information and Communication Technology (ICT) is a comprehensive term encompassing technologies used for managing, processing, storing, and disseminating information. Information and communication technology according to O'Brien & Marakas (2018) is a broad category that includes a variety of tools and technologies used for information

management, processing, transmission, and exchange. It consists of networking infrastructure, hardware and software components that support information access, communication and teamwork.

ICT has completely changed how libraries operate and provide services while also improving user experience, efficiency, and accessibility. Library administration systems (LMS), which automate a number of library operations like cataloging, circulation, acquisitions, and interlibrary loan administration, are some of the areas where ICT in libraries are useful. By streamlining administrative duties, these technologies increase worker productivity and resource efficiency (Lynch & Horton, 2019).

Libraries use mobile technologies to provide mobile-friendly access to library resources, services and applications. Mobile apps, responsive websites and SMS notifications cater for the needs of users who prefer to access information on mobile devices (Nguyen & Bradburn, 2016). These applications show how ICT enhances the effectiveness and relevance of libraries in the digital age by empowering users with seamless access to information and services. Digital preservation initiatives aim to ensure the long-term accessibility and integrity of digital collections. Preservation strategies include metadata creation, format migration and digital rights management (Kulovits & Rauber, 2019). As information technologies user needs and societal expectations have changed over time, librarians have also changed significantly.

Librarians are professionals who manage and facilitate access to information resources. They are known as information specialists who are skilled at organizing, accessing, and evaluating information across a variety of formats and disciplines (Rubin, 2015). They help users navigate complex information landscapes, find pertinent resources and conduct productive research. In order to satisfy users' information needs, improve their access to resources and assist

them in their academic and research endeavors, librarians provide a wide range of services. Among the services provided by librarians include reference and information services as well as help with locating, assessing and efficiently utilizing information resources (Rubin, 2015). They respond to questions, look up relevant material and provide advice on database selection, citation styles and research techniques. In a bid to improve users' information skills and competencies and their ability to use information ethically, librarians provide training and information literacy programs. These programs teach users where to find, assess, create and lead workshops, tutorials and course-integrated sessions (Association of College and Research Libraries, 2015).

To address the needs of their communities, librarians are in charge of selecting, obtaining, and organizing resources as well as developing and managing collections (Bopp & Smith, 2017). Furthermore, they create collections that are both relevant and diverse, work with faculty members, track academic trends and evaluate users' information needs. Librarians also facilitate users' ability to access and borrow resources from the library's holdings (Smith & Wiese, 2019). They oversee document delivery, interlibrary loans and circulation services while streamlining procedures and regulations to increase user comfort and satisfaction. To improve access to information resources and enable remote learning and research, they make use of digital services and technologies (Mestre & Duarte, 2016). To reach a variety of user communities and meet their information needs, they work in partnership with campus departments, neighborhood associations and nearby educational institutions. Librarians provide users with support and guidance, guiding users through the facilities, tools and technology of libraries (Farkas, 2017). In an effort to increase users experience and happiness, offer one-on-one consultations, help with specialist research tools and technical troubleshooting, Librarians

equally aid users in their academic and professional efforts by providing information on research methodology, data sources and scholarly publication procedures.

Statement of the Problem

ICTs create an enabling environment where library services can be rendered from the comfort home of the users, reduce the stress associated with searching through volumes of printed materials to cater for the needs of the users, provide access to current and up to date information, enable publishers to edit their publication easily, enhance easy storage of information as well as enabling librarians to carry out routines works in the library in a fast and more convenient manner.

Despite the benefits of information and communication technology for effective service delivery by librarians, the researcher however observed from preliminary investigation that the application of ICT for effective library service delivery in Joseph Saawuan Tarka University, Makurdi is hindered due to certain factors there by limiting the level of service delivery in other not to meet the needs of the academic community. If this problem is not address it will lead to poor quality of service delivery, poor performance of the students and the quality of graduate produce from this institution cannot compete with their counterpart from other institutions as well as the quality of output from graduate in state and Nigeria by extension will suffer. It is hinge on the above problem that this research paper application of Information and Communication Technology for effective library service delivery among librarians in Joseph Saawuan Tarka University, Makurdi is set out to investigate.

Research Questions

1. What is the extent to which librarians access information and communication technology resources in Joseph Saawuan Tarka University Makurdi, Benue State, Nigeria?
2. What is the extent to which librarians utilize information and communication technology resources in Joseph Saawuan Tarka University Makurdi, Benue State, Nigeria?
3. What is the influence of information and communication technology resources application on effective library service delivery among librarians in Joseph Saawuan Tarka University Makurdi, Benue State, Nigeria?
4. What factors hinder application of information and communication technology resources in effective service delivery among librarians in Joseph Saawuan Tarka University Makurdi, Benue State, Nigeria?

Hypothesis

Ho1: Application of information and communication technology has no significant association between effective library services delivery among librarians in Joseph Saawuan Tarka University Makurdi Benue state, Nigeria.

Literature Review

Information and Communication Technology (ICT) has significantly transformed the landscape of libraries, revolutionizing how information is accessed, organized, and disseminated. ICT has completely changed how information is accessed, arranged and shared, drastically altering the library scene. The incorporation of ICTs in libraries, once mostly associated with physical book collections have transformed into dynamic hubs for digital resources and collaborative learning environments. (Luke, Han & Stratton 2024). Routine duties have been

eased by the use of automation systems and library management software, freeing up librarians to concentrate more on resource development and user services. These technologies help with inventory management, circulation and cataloging which improves the general effectiveness of library operations (Kumar and Singh 2019).

Online Public Access Catalogs (OPACs) are a major accomplishment of information and communication technology in libraries. With the ease of accessing, reserving, and renewing resources online, OPACs have emerged as a crucial resource for information retrieval. Digital libraries and repositories have been made possible by ICT, which has also aided in the digitalization of library materials (Chowdhury & Chowdhury, 2023). Digital repositories also facilitate open access to initiatives and cooperative research by improving, archiving and sharing of intellectual results (Borgman, 2020).

Information literacy entails being able to find, assess, and use information efficiently and ICT offers the platforms and tools necessary to foster these abilities. In order to provide workshops and tutorials on database searching, citation management and critical evaluation of online resources, libraries frequently incorporate ICT into their information literacy programs (Bruce, 2017). Social media is now a useful tool that libraries may use to engage with their local communities and attract new patrons (Powell, 2021). The author further stated that, libraries now play a dynamic role as hubs for literacy, information access, and community involvement.

Libraries are unable to fully utilize technology because they find it difficult to make investments in new hardware, software, and training courses (Forte & Lam, 2015). ICT deployment in libraries may be hampered by staff and stakeholder resistance, as they may be reluctant to adopt new technologies (Dervin, 2019). The efficient use of ICT in libraries may be

hampered by a lack of skilled employees and insufficient training programs for current employees (Kaur & Arora, 2015).

To assist users in efficiently navigating information resources, librarians offer reference support and information literacy training. Librarians help users find pertinent materials, search the literature and assess the reliability and correctness of information sources (Ross, 2014). Additionally, they conduct training classes on information literacy abilities like citation management and database searches (ACRL, 2016). Librarians oversee institutional repositories, digital repositories, and electronic resources to guarantee easy access to digital content (Breeding, 2014). They also promote policies that uphold democratic ideals and information access, championing intellectual freedom, fair access to information, and privacy rights (ALA, 2019). Librarianship encompasses a multifaceted profession dedicated to managing, organizing and providing access to information resources. Digital libraries offer a wide variety of resources to librarians, such as multimedia content, articles, and e-books. (Borgman, 2017). To improve information retrieval, librarians regularly use search engines and internet databases and also support their study with a plethora of scholarly resources from academic databases like ProQuest and JSTOR (Bawden, 2018).

The extent to which librarians use online databases influences the depth of information that is accessible and the caliber of support that is given to users. Library Management Software (LMS) is widely used by librarians to expedite administrative work. The significance of LMS in acquisitions, budget management, and user interactions is emphasized (Dhanavandan, 2014). Librarians' proactive use of ICT resources is becoming more and more important as libraries continue to change in order to satisfy the varied information needs of their clients (Borgman, 2017). Users can access information remotely online databases, and e-books, which improves

efficiency and user-friendliness of library services (Borgman, 2017). The procedures of digitization and archiving aid in the preservation of historical records, delicate materials and rare manuscripts, hence promoting the long-term viability of library collections (Lavoie, Lavoie & Dempsey, 2015).

Libraries may now provide individualized and user-focused services. Data analysis of user activity enables services to be customized to the unique requirements and preferences of library users (Luo, 2015). The efficient use of ICT resources in libraries has resulted in revolutionary improvements that have improved service delivery in terms of accessibility, efficiency, cooperation, preservation and user-centricity (Bawden, 2018). Libraries must adjust to the ongoing changes in technology and take use of these developments to enhance their offerings. (Koehler & Pemberton, 2017). This entails making accommodations for users with disabilities, reaching out to marginalized communities through outreach initiatives and utilizing digital technology to expand library services online and off (Association of Research Libraries, 2019). In order to increase service offerings, exchange resources and cooperatively address community needs, libraries work with colleges, universities, government agencies, and charitable organizations (Kenney, 2018).

The use of contemporary library management systems is essential for providing services to libraries effectively (Vakkari, 2018). Integrated library software and automation technologies help to create more efficient workflows, better cataloging and effective circulation procedures. Library management systems improve the general effectiveness of library operations, freeing up librarians to concentrate on more value-added services (Chowdhury & Chowdhury, 2022).

Additionally, librarians are essential in helping people develop their information literacy. Bruce (2017), entail instructing consumers on the abilities to find, assess, and apply knowledge efficiently. To keep up with new trends and technologies, continuous training guarantees that librarians maintain their proficiency in employing novel tools and approaches to improve service provision (Harer & Harris, 2021). Information and communication technology (ICT) integration has completely changed how librarians organize and distribute information and libraries are essential for facilitating access to information. Electronic access to a wide range of materials, such as e-books, articles, and multimedia content, is provided via digital libraries (Borgman, 2014).

Online databases and search engines are available for librarians to browse and use in order to efficiently and rapidly retrieve information. Scholarly databases like JSTOR and ProQuest enable librarians to retrieve scholarly material and help clients with their study (Bawden, 2018). Search engines such as Google Scholar can be integrated with traditional library resources to help librarians bridge the gap between print and digital resources library management software (LMS), helps librarians with a range of administrative duties, such as budget management, user administration, and acquisitions (Dhanavandan, 2014).

Methodology

The study adopted descriptive survey research design. The population of the study comprises of 46 professional librarians of Francies Suleiman Idachaba library Joseph Saawuan Tarka University Makurdi, Benue State. The instrument used for data collection was self-structured questionnaire. Census sampling technique was adopted to sample all the professional

librarians for the study Tables, frequency and percentages were used to interpret data collected while Chi-square was used to test hypothesis.

Results and Discussion

Research Question 1

What is the extent to which professional librarians access information and communication technology resources in Joseph Saawuan Tarka University Makurdi?

To answer the research question, the analyzed result is presented in table 1

Table 1: Means and standard deviations of the extent to which librarians access information and communication technology resources in Joseph Saawuan Tarka University Makurdi

S/N	Description	VH E	HE	LE	VLE	N	Mean	Std Dev.	Decision
1	Integrated Library Systems is easily accessible in the library.	35	7	3	1	46	3.66	.715	VHE
2	Most librarians have access to Digital libraries in the University library.	33	8	4	2	46	3.55	.848	VHE
3	Online databases are accessible by librarian in the University library.	9	31	4	2	46	2.84	.629	HE
4	Google Scholar is accessible by librarians.	10	28	6	2	46	2.37	.955	HE

5	Most librarians have access library Management Software in the course of rendering services.	3	5	12	26	46	1.73	1.077	LE
6	Automation system is one among the ICT resources that can be accessed by professional librarians in the library.	4	6	12	24	46	1.34	.773	LE
Grand mean							2.35	0.86	

Source: Field Survey, 2024

Table 1 shows that some items captured on to what extent librarians access information and communication technology resources in Joseph Sarwuan Tarka University Makurdi have their mean ratings above the criterion level of 2.50 and other items below the criterion level. This indicates that Integrated Library Systems is easily accessible in the library has the highest scores of (35) representing (3.66) means scores, most librarians have access to Digital libraries in the University library (33) scores representing (3.55) means scores. Therefore, to answer the research question, the grand mean of 2.35 with the standard deviation of 0.86 indicates that professional librarians access information and communication technology resources in Joseph Sarwuan Tarka University Makurdi to a Low extent. This finding is agreement with Abubakar, Gupiyem and Banwar (2017) who's study found that postgraduate level of accessibility to ICT facility was low. The result of this study disagreed with the finding of Chidozie-Anaeche and Ozofofor (2019) who's study discovered that, teachers and students have high level of access to ICT resources.

The finding also disagreed with Okere (2022) who's similar study revealed that, the level of accessibility of ICT facilities by library personnel in Southwestern Nigeria was moderate.

Research Question 2

What is the extent to which professional librarians utilize information and communication technology resources in Joseph Saawuan Tarka University Makurdi?

To answer the research question, the analyzed result is presented in table 2.

Table 2: Means and standard deviations of the extent to which professional librarians utilize information and communication technology resources in Joseph Saawuan Tarka University Makurdi

S/N	Description	VHE	HE	LE	VLE	N	Mean	Std Dev.	Decision
1	Librarians use integrated library systems available in the library.	8	26	7	5	46	2.97	.577	HE
2	Digital libraries are utilized by librarians in the university library.	7	31	5	3	46	2.88	.714	HE
3	Librarians use online databases for research and service delivery in the library.	32	5	6	3	46	3.31	.605	VHE
4	Google Scholars are mostly utilized by librarians in the library.	6	33	5	2	46	2.90	.657	HE
5	Librarians use Library Management Software for their personal growth and development.	29	11	5	1	46	3.29	1.002	VHE
6	Automation systems is use by librarians	25	14	4	3	46	3.27	1.003	VHE
Grand mean						46	2.90	0.86	

Source: Field Survey, 2024

Table 2 shows that all items captured on the extent to which librarians utilize information and communication technology resources in Joseph Sarwuan Tarka University, Makurdi have their mean ratings above the criterion level of 2.50 and other items below the criterion level. Librarians use online databases for research and service delivery in the library (32) representing (3.31) mean scores, Librarians use Library Management Software for their personal growth and development (29) representing (3.29) mean scores, automation system is use by librarians (25) representing (3.27) mean score. Therefore, to answer the research question, the grand mean of 2.90 with the standard deviation of 0.86 indicates that professional librarians utilize information and communication technology resources in Joseph Sarwuan Tarka University Makurdi to a high extent. This finding is in line with the findings of Okonoko and Eruvwe (2021) who's study found that, information and communication technology resources were utilize to very high extent by librarians in colleges of education. The study is also in agreement with Ezecheta (2022) who's study found that, the extent of utilization of ICT facilities in the academic library under study is to a high extent.

Research Question 3

What is the influence of information and communication technology resources application on effective library service delivery among librarians in Joseph Sarwuan Tarka University Makurdi?

To answer the research question, the analyzed result is presented in table 3.

Table 3: Mean and standard deviations of the influence of information and communication technology resources application on effective library service delivery among professional librarians in Joseph Sarwuan Tarka University Makurdi

S/N	Description	SA	A	D	SD	N	Mean	Standard deviation	Decision
1	ICT application improved accessibility to information resources.	33	9	3	1	46	3.72	.648	SA
2	Availability of resources enhance through ICT application.	8	28	6	4	46	3.01	.533	SA
3	ICT application providing prompt and accurate responses to user queries.	29	8	7	3	46	3.60	.747	SA
4	Library Management Systems (LMS) and integrated library automation systems influence through ICT application.	31	8	5	2	46	3.70	.680	SA
5	ICT facilitates collaborative learning through virtual platforms and online forums.	17	21	5	3	46	3.33	.687	SA
6	ICT application enable library to offer personalized and user-centric services.	32	9	4	1	46	3.63	.697	SA
Grand mean						46	3.39	0.64	

Source: Field Survey, 2024

Table 4 reveals that items 1-6 in this section have means scores of 3.01, 3.60, 3.70, 3.33, 3.63, and 3.08 with the corresponding standard deviation of 0.533, 0.747, 0.680, 0.687, 0.697, and 0.577 respectively. Based on the boundary criteria for decision making, it means the mean ratings for items 1 to 6 in this section are above the cut-off point of 2.50. The cluster mean of

3.39 was also found to be above the cut-off point of 2.50. This implies that effective application of information and communication technology resources influences library service delivery among professional librarians in Joseph Sarwuan Tarka University Makurdi. This finding has agreed with Madukoma, Olanusi and Babalola (2023) Who's study discovered that, ICT resources have a positive and significant influence on research output of academic librarians in public university libraries in South-West, Nigeria. The finding of this study also collaborates with the finding of Abdulkadir, Hussaini and Omali (2023) who's study revealed that there is high impact of ICT on job performance by librarians in Court Library in Mina Niger State.

Research Question 4

What factors hinder application of information and communication technology resources in effective service delivery among librarians in Joseph Saawuan Tarka University Makurdi?

To answer the research question, the analyzed result is presented in table 4.

Table 4: Means and standard deviations of the factors that hinder application of information and communication technology resources in effective service delivery among professional librarians in Joseph Sarwuan Tarka University Makurdi

S/N	Description	SA	A	D	SD	N	Mean	Standard deviations	Decision
1	Inadequate technology infrastructure.	28	9	7	2	46	3.52	.597	SA
2	slow internet connectivity.	9	21	10	6	46	3.00	.717	A
3	insufficient network resources.	27	10	5	4	46	3.49	.823	SA
4	Budgetary constraints.	31	8	6	1	46	3.57	.823	SA

5	Resistance from staff and stakeholders	30	9	5	2	46	3.53	.829	SA
6	Shortage of qualified personnel and inadequate training programs	8	28	6	4	46	2.93	.633	A
Grand mean						46	3.17	0.75	

Source: Field Survey, 2024

Table 4 shows that all the items captured on the factors that hinder application of information and communication technology resources in effective service delivery among librarians in Joseph Sarwuan Tarka University Makurdi have their mean ratings above the criterion level of 2.50, This indicates that budget constraints hindered effective application of information and communication technology (31) representing (3.57) mean score, resistance from staff and stakeholders hindered effective application of information and communication technology (30) representing (3.53) mean score, inadequate technology infrastructure is one among the factors that hinder effective application of information and communication technology (29) representing (3.52) mean scores, insufficient network resources hindered effective application of information and communication technology (27) representing (3.49) mean score, , Therefore, to answer the research question, the grand mean of 3.17 with the standard deviation of 0.75 indicates that all the factors hindered effective application of information and communication technology on service delivery among librarians in Joseph Sarwuan Tarka University, Makurdi.

This finding is in agreement with the findings of Okere (2022) who's study discovered that, Poor Internet access, inadequate financial support and lack of adequate ICT facilities and

infrastructure were the major constraints to the ICTs use by library personnel in Federal College of Education Special, Oyo and Federal College of Education Osiele, Abeokuta. This finding dose not agreed with Haliso (2011) who's study found that, lack of institutional commitment and lack of updated ICT strategy are the factors affecting ICT availability and use of ICT by academic librarians in Southwestern Nigeria.

Test of Hypothesis

Ho1: Application of information and communication technology has no significant association between effective library services delivery among professional librarians in Joseph Sarwuan Tarka University, Makurdi, Benue state, Nigeria.

Table 5. Chi-square showing significant association between application of information and communication technology and effective library services delivery among librarians in Joseph Sarwuan Tarka University Makurdi Benue state, Nigeria.

Item	df	χ^2	Asymp. Sig
Chi-square	117.940 ^a	0.000	
No. of valid case	6		

Source: Field Survey 2024

Table 5. shows that the χ^2 calculated is 117.940^a and sig (p-value) is 0.000. Hence $p < 0.05$, the null hypothesis which state that application of information and communication technology has no significant association between effective library services delivery among librarians in Joseph Sarwuan Tarka University Makurdi Benue state, Nigeria. is rejected. This indicates that there is a significant association between application of information and

communication technology and effective library services delivery among professional librarians in Joseph Saawuan Tarka University Makurdi Benue state, Nigeria.

Conclusion

Information and communication technology is a tool that facilitate effective information services delivery among libraries and librarians in universities of higher learning of which Joseph Sarwuan Tarka University Makurdi is part of however, the application of these technologies for effectives services delivery in most cases since to be faced with a lot of challenges. The study revealed that effective application of information and communication technology resources influences library services delivery among professional librarians in Joseph Sarwuan Tarka University Makurdi, Benue State, Nigeria.

Recommendations

From the findings of the study and the conclusion drawn, the study makes the following recommendations:

1. Library management in Joseph Sarwuan Tarka University, should consistently organized training programmes that equip library staff with the necessary skills that will improve their level of accessing and utilizing information in an electronic form for effective services delivery.
2. More professional librarians who are ICT complaints should be employed in the library to increases staff strength of the library for effective and qualitative electronic library service delivery.

3. More budgetary provision should be allotted to library by the university management to enable the library acquire more ICT infrastructure needed in library to enhance services delivery among librarians.
4. The library Management should regularly carryout ICT training program on students to enable them cope with library services rendered with the use of information and communication Technologies.

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