EISSN 3141-6152
GLOBAL ACADEMIC INTERNATIONAL JOURNAL OF LIBRARY AND INFORMATION SCIENCE (GAIJLIS) VOL: 1. NO.1 (2026) PP 35-46



Received: 10.02.2026| Accepted: 26.04.2026 |Published: 30.03.2026
Citations: RABIU, A. M, & MAXWELL, C.E., Utilization of ICT skills for knowledge sharing and service delivery among academic librarians in universities in north central Nigeria (2026) Gaijlis vol.1. No.1. Pp.35-46 https://globreshub.org/index.php/gaijlis/
DOI:https://doi.org/10.5281/zenodo.21760686

UTILIZATION OF ICT SKILLS FOR KNOWLEDGE SHARING AND SERVICE DELIVERY AMONG ACADEMIC LIBRARIANS IN UNIVERSITIES IN NORTH CENTRAL NIGERIA

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Abstract

This study investigates the utilization of ICT skills and knowledge-sharing practices among librarians in university libraries in North Central Nigeria, and their impact on service delivery. A descriptive survey design was employed, with data collected from 170 academic librarians using a structured questionnaire. Findings indicate a moderate level of ICT competency among librarians, with strengths in areas like copyright management and website design, but relative weaknesses in database management. Knowledge-sharing practices are also moderately engaged, predominantly through informal discussions and job rotations rather than structured formats. Service delivery was rated at a moderate level, with virtual reference services being the strongest component. Statistical analysis revealed significant positive correlations, with ICT skills demonstrating a stronger predictive relationship (β=.327, p<.001) for service delivery than knowledge sharing (β=.195, p=.011). The study concludes that while both factors contribute positively, there is considerable room for enhancement through targeted training and formalized collaborative mechanisms. Recommendations include investing in advanced ICT training programs and establishing structured knowledge-sharing platforms to improve library service outcomes.

Keywords: **ICT Skills, Knowledge Sharing, Service Delivery, Academic Librarians, University Libraries, North Central Nigeria, Digital Literacy, Library Management.**

*Corresponding author(s) Aliyu Muhammed RABIU (2026) agree that this article remain permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

1. Introduction

University libraries are pivotal to academic excellence, serving as dynamic hubs for knowledge dissemination, research support, and learning. In the contemporary digital era, the effectiveness of these libraries is no longer measured solely by the size of their physical collections but by their capacity to deliver seamless, technology-driven services. Consequently, the proficiency of librarians in utilizing Information and Communication Technology (ICT) skills has become a critical determinant of operational success. ICT skills enable librarians to

navigate complex digital ecosystems, manage electronic resources, and offer virtual reference services, thereby directly influencing the accessibility and quality of information provided to users. The transition from print to digital formats has necessitated a paradigm shift in the skill sets required of library staff, moving from traditional cataloging to advanced data curation and digital asset management.

Beyond individual technical competence, the organizational culture of knowledge sharing plays a transformative role in service delivery. Knowledge sharing involves the systematic exchange of expertise, experiences, and best practices among professionals, (Rabiu, 2012). When librarians actively collaborate and share insights regarding emerging technologies or user engagement strategies, they collectively enhance the institution's intellectual capital. This collaborative practice reduces redundancy, fosters innovation, and ensures that technical skills are disseminated throughout the workforce. The absence of such synergy often results in static service models that fail to meet the evolving needs of the academic community.

However, in developing regions like Nigeria, the potential of these variables remains largely underutilized. Despite the recognized importance of ICT and knowledge sharing, many university libraries in North Central Nigeria still face challenges due to inadequate technological adoption and fragmented professional exchange. Preliminary observations suggest that librarians in this region may not be fully leveraging ICT tools, leading to a gap between available digital resources and actual user satisfaction. This study, therefore, seeks to investigate the extent to which ICT skills and knowledge sharing influence service delivery in university libraries in North Central Nigeria. It further assesses the level of service delivery, aiming to establish a predictive model for enhancing library performance in the region.

1.1 Statement of the Problem

Despite the recognized importance of ICT and knowledge sharing in modern librarianship, many university libraries in developing regions like Nigeria still face challenges in service delivery due to inadequate technological adoption and fragmented knowledge exchange among professionals (Tonta, 2015; Poulter, 2017). Preliminary observations and literature indicate that librarians in North Central Nigeria may not be fully leveraging ICT tools or engaging in systematic knowledge-sharing practices. This deficiency hinders the efficiency, accessibility, and quality of library services, creating a disconnect

between the library's digital potential and the actual support provided to the academic community.

1.2 Objectives of the Study

The main objectives of this study are to:

1. Determine the extent of ICT skills possessed by librarians in university libraries in North Central Nigeria.
2. Examine the extent to which librarians in university libraries in North Central Nigeria engage in knowledge-sharing practices.
3. Assess the level of service delivery by librarians in university libraries in North Central Nigeria.
4. Determine the relationship between ICT skills, knowledge sharing, and service delivery among librarians in North Central Nigeria.

1.3 Research Questions

1. To what extent do librarians possess ICT skills in university libraries in North Central Nigeria?

2. To what extent do librarians in university libraries in North Central Nigeria engage in knowledge-sharing practices?

3. To what extent are library services delivered by librarians in university libraries in North Central Nigeria?

4. What is the relationship between ICT skills, knowledge sharing, and service delivery among librarians in North Central Nigeria?

1.4 Hypotheses

$H_0$1: There is no significant relationship between ICT skills and service delivery among librarians in North Central Nigeria.

$H_0$2: There is no significant relationship between knowledge sharing and service delivery among librarians in North Central Nigeria.

2. Literature Review

2.1 ICT Skills Possessed by Librarians

ICT skills are essential for contemporary library operations, encompassing digital literacy, database management, the use of integrated library software, and online resource navigation. In the modern academic environment, these competencies determine a library's ability to function effectively. Gupta and Sharma (2019) note that the digital age demands that librarians evolve from gatekeepers of information to facilitators of digital knowledge. Recent studies emphasize that the scope of necessary ICT skills has expanded to include web 2.0 technologies and data analytics. For instance, Rabiu Chigwada (2021) highlights that digital literacy is now a core requirement for librarians to support remote learning and virtual services, a need

accelerated by the post-pandemic shift in higher education.

In Nigerian university libraries, studies show varied levels of ICT proficiency. While some librarians demonstrate competence in basic applications, many lack the advanced skills needed for digital curation, web management, and data visualization (Ojedokun & Okafor, 2015). These skills gap often results in the underutilization of expensive digital subscriptions. Furthermore, technical competence is not static; it requires continuous upgrading to keep pace with rapid technological changes, such as the integration of artificial intelligence in library systems (Ukachi, 2023). Ultimately, ICT skills directly influence service efficiency, user satisfaction, and the adoption of innovative service models (Thanuskodi, 2012 & Rabiu, 2020).

2.2 Knowledge-Sharing Practices among Librarians

Knowledge sharing involves the exchange of expertise, experiences, and best practices among professionals to create new knowledge or enhance existing capabilities (Hider, 2019). In academic libraries, this occurs through formal mechanisms like workshops and seminars, as well as informally via peer discussions and digital platforms (Ahmed et al., 2018). Effective knowledge sharing is a social process that enhances problem-solving and professional development. Ntema (2023) argues that knowledge-sharing behavior among librarians is significantly influenced by organizational culture and the perceived benefit of sharing information with colleagues.

However, barriers such as lack of institutional support, time constraints, and inadequate technological infrastructure often limit its practice in developing regions (Chong, 2013). Recent literature suggests that digital tools are reshaping how librarians share knowledge. Al-Daihani (2020) found a significant positive relationship between the use of social media tools and knowledge sharing among librarians, suggesting that digital platforms can bridge the gap between formal and informal exchange. When librarians engage in robust knowledge sharing, it leads to improved collective competence and better service outcomes (Bawden & Robinson, 2019).

2.3 Service Delivery in University Libraries

Service delivery in university libraries encompasses reference assistance, information literacy instruction, digital resource access, interlibrary loans, and user

support services (Bassey, 2022). The quality of these services is increasingly tied to librarians' technological competencies and collaborative practices. In the digital era, service delivery metrics have shifted from physical footfall to online engagement and user satisfaction with virtual platforms. Tenopir and King (2018) emphasize that the value of the academic library is realized through the effective delivery of content and services to users.

Libraries with strong ICT infrastructure and a culture of knowledge sharing report higher user satisfaction and more efficient service outcomes (Ebijuwa & Fasae, 2022). However, service delivery can be hindered if librarians lack the requisite skills to manage digital tools or if knowledge is siloed within departments. Yusooff (2022) and Rabiu (2023) asserts that the quality of library services is a direct reflection of the staff's readiness to adapt to digital transformation. Therefore, the interplay between technical skills and knowledge exchange is critical for maintaining high service standards in Nigerian university libraries.

3. Method

This study adopted a descriptive survey design. The population comprised librarians in university libraries in North Central Nigeria. A sample of 170 librarians was selected using simple random sampling. Data were collected using a structured questionnaire titled "Questionnaire on the Utilization of ICT Skills for Knowledge Sharing and Service Delivery among Academic Librarians (QU-IKS-SDAL)." The instrument was validated by experts and tested for reliability, yielding Cronbach's alpha coefficients above 0.87 for all sections. Data analysis involved descriptive statistics (mean, standard deviation) and inferential statistics (Pearson correlation, regression).

4. Data Analysis and Results

4.1 Research Question 1: Extent of ICT Skills Possessed

Table 1: Descriptive Statistics for ICT Skills Possessed by Librarians (N = 170)

S/N	ICT Skill Area	Very High Extent	High Extent	Low Extent	Very Low Extent	Mean	SD	Decision
1	Copyright & IPR	53	69	35	13	2.95	0.91	High Extent
2	Website Design	44	61	45	20	2.76	0.97	High Extent
3	Social Media Use	40	62	48	20	2.72	0.96	High Extent
4	Data Analysis	38	58	54	20	2.67	0.95	High Extent
5	Database Management	33	61	50	26	2.59	0.97	High Extent
	Aggregate Mean/SD	-	-	-	-	2.63	0.93	High Extent

Note: Criterion mean = 2.50.

The assessment of ICT skills among academic librarians in North Central Nigeria reveals a moderate level of technical proficiency. With an aggregate mean of 2.63 (SD = 0.93), the respondents scored above the 2.50 criterion mean, suggesting that they possess the foundational skills necessary for modern librarianship. Individually, the highest level of competence was reported in Copyright and Intellectual Property Rights (Mean = 2.95), indicating a strong professional awareness of legal frameworks in the digital age. This was followed by proficiency in Website Design (Mean = 2.76) and Social Media Use (Mean = 2.72). However, more technical domains such as Data Analysis (Mean = 2.67) and Database Management (Mean = 2.59) received the lowest ratings. While still above the threshold, these lower scores suggest that while librarians are comfortable with front-end communication tools, they may require targeted training in backend data systems to fully optimize library operations.

4.2 Research Question 2: Knowledge-Sharing Practices

Table 2: Descriptive Statistics for Knowledge-Sharing Practices (N = 170)

S/N	Knowledge-Sharing Practice	Very High Extent	High Extent	Low Extent	Very Low Extent	Mean	SD	Decision
1	Informal Discussions	77	63	20	10	3.22	0.87	High Extent
2	Job Rotation	53	50	49	18	2.81	1.00	High Extent
3	Professional Networks	39	63	47	21	2.71	0.96	High Extent
4	Collaborative Research	31	72	51	16	2.69	0.88	High Extent
5	Internal Training	37	64	47	22	2.68	0.96	High Extent
	Aggregate Mean/SD	-	-	-	-	2.64	0.95	High Extent

Note: Criterion mean = 2.50.

Regarding the practices used to exchange professional expertise, the data indicates a moderate level of engagement with an aggregate mean of 2.64 (SD = 0.95). A significant finding in this area is the heavy reliance on Informal Discussions, which emerged as the most prevalent practice (Mean = 3.22). This suggests that knowledge flow within these libraries is largely organic and social rather than structured. Job Rotation (Mean = 2.81) and participation in Professional Networks (Mean = 2.71) also serve as important channels for skill acquisition. Conversely, more formalized methods such as Collaborative Research (Mean = 2.69) and Internal Training (Mean = 2.68) were less frequent. This pattern implies a preference for experiential and interpersonal learning over institutionalized mentoring programs, which may limit the systematic preservation of institutional knowledge.

4.3 Research Question 3: Level of Service Delivery

Table 3: Descriptive Statistics for Library Service Delivery (N = 170)

S/N	Service Type	Very High Extent	High Extent	Low Extent	Very Low Extent	Mean	SD	Decision
1	Virtual Reference	52	62	38	18	2.87	0.97	High Extent
2	Collaborative Online Spaces	40	63	43	24	2.70	0.98	High Extent
3	Plagiarism Detection	39	57	53	21	2.67	0.97	High Extent
4	Electronic Resource Access	33	61	59	17	2.65	0.91	High Extent
5	Digital Literacy Training	37	56	52	25	2.62	0.99	High Extent
	Aggregate Mean/SD	-	-	-	-	2.63	0.94	High Extent

Note: Criterion mean = 2.50.

The delivery of library services across the surveyed universities yielded an aggregate mean of 2.63 (SD = 0.94), signifying a moderate standard of service. Virtual Reference Services (Mean = 2.87) stood out as the most effectively implemented service, showing that librarians are successfully utilizing digital platforms to meet user queries. Other areas such as the use of Collaborative Online Spaces (Mean = 2.70) and Plagiarism Detection services (Mean = 2.67) show a steady transition toward digital support. However, Electronic Resource Access (Mean = 2.65) and Digital Literacy Training (Mean = 2.62) scored the lowest. These results suggest that while librarians possess the skills, the actual translation of those skills into user-facing training and resource accessibility is not yet maximized.

Hypotheses Testing Table 4: Pearson Correlations Between Key Variables

Table 4: Pearson Correlations Between Key Variables

Variable	1	2	3
1. ICT Skills	—		
2. Knowledge Sharing	.195*	—	
3. Service Delivery	.327**	.195*	—

Note: *p* < .05, **p** < .01.

The Pearson Product Moment Correlation was employed to determine the direction and strength of the relationships between ICT Skills, Knowledge Sharing, and Service Delivery. The results in Table 4 show a significant positive correlation between ICT skills and service delivery (r = .327, p < .01). This suggests that as librarians' proficiency in ICT increases, the quality and extent of service delivery also improve significantly. And, a significant but weaker positive correlation was observed between knowledge sharing and service delivery (r = .195, p < .05). Interestingly, ICT skills and knowledge sharing also show a positive relationship (r = .195), suggesting that librarians with better technical skills are also more likely to engage in the exchange of professional information.

Table 5: Simple Linear Regression: ICT Skills Predicting Service Delivery

Predictor	B	SE	B	t	p	Decision
Constant	1.525	0.247	-	6.182	.000	Significant
ICT Skills	0.419	0.093	.327	4.481	.000	Significant

Note. R^2 =.107, F(1,168) =20.079, p<.001

Table 5 presents the simple linear regression analysis used to determine the extent to which ICT skills influence library service delivery. The model revealed a significant effect,
F (1,168) = 20.079, p<.001. The Coefficient of Determination (R^2 =.107) indicates that ICT Skills account for 10.7% of the variance in library service delivery. The Unstandardized Coefficient (B = 0.419) further explains that for every unit increase in a librarian's ICT skills, there is a predicted increase of 0.419 units in the efficiency of service delivery. The Beta value (β=.327) confirms that ICT skills are a statistically significant and positive predictor of the

library's ability to meet user needs.

Table 6: Simple Linear Regression Analysis of Knowledge Sharing Predicting Service Delivery

Predictor	B	SE	β	t	P
Constant	2.010	0.241	—	8.347	.000
Knowledge Sharing	0.234	0.091	.195	2.571	.011

Note: (R^2 = .038, ; F(1,168) = 6.609, ; p = .011)

Table 6 presents the results of a simple linear regression analysis conducted to determine the influence of Knowledge Sharing on Service Delivery. The model is statistically significant, (F (1,168) = 6.609, ; p = .011). The (R^2) value of .038 indicates that knowledge sharing explains 3.8% of the variance in library service delivery. The unstandardized coefficient for Knowledge Sharing (B = 0.234) indicates a positive relationship; for every one-unit increase in knowledge-sharing practices, service delivery is expected to improve by 0.234 units. The Beta value of .195 (t = 2.571, ; p = .011) establishes a positive but modest influence.

5. Discussion of Findings

The inferential analysis suggests a hierarchy of influence among the variables studied. While the Pearson correlation confirmed that both ICT Skills (r=.327) and Knowledge Sharing (r=.195) are positively related to service delivery, the regression models reveal that ICT skills are a much stronger predictor (R^2 =.107) than knowledge sharing (R^2 =.038).

The findings indicate that librarians in North Central Nigeria possess moderate ICT skills, engage moderately in knowledge sharing, and deliver library services at a moderate level. The positive correlation between ICT skills and service delivery aligns with previous studies (Thanuskodi, 2012; Ajayi & Akinwale, 2015), confirming that technological competence enhances service efficiency. Similarly, the link between knowledge sharing and service delivery supports Bawden and Robinson's (2019) assertion that collaborative practices improve library performance.

For university management and library administrators in North Central Nigeria, these findings imply that while fostering a collaborative culture where librarians share ideas is useful, the primary intervention for improving service delivery should be technical capacity building. Specifically, general ICT proficiency provides a more substantial boost to service outcomes than the social exchange of knowledge alone. Therefore, knowledge sharing should be seen as a complementary practice to, rather

than a replacement for, rigorous ICT training.

6. Conclusion

The study concludes that ICT skills and knowledge-sharing practices significantly influence service delivery in university libraries in North Central Nigeria. However, the moderate mean scores indicate that current proficiency levels and collaborative structures are not fully optimized. To enhance service quality, libraries must prioritize the development of advanced technical competencies and transition from informal exchanges to structured knowledge-sharing mechanisms, thereby ensuring they meet the evolving demands of the academic community.

7. Recommendations

To enhance library services, the following recommendations are made:

1. Invest in ICT Training: University libraries should invest in continuous ICT training programs focusing on advanced digital tools, data management, and emerging technologies to bridge the gap between basic and advanced technical skills.
2. Formalize Knowledge Sharing: Libraries should establish formal knowledge-sharing platforms such as regular seminars, mentoring schemes, and online forums to encourage professional collaboration and move beyond reliance on informal discussions.
3. Incentivize Development: Management should recognize and reward librarians who actively engage in knowledge exchange and ICT skill development to motivate sustained improvement in service delivery.

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