

## **Assessment of Digital Information Management and Communication Technology Skills of Librarians in the Delivery of Information Services in Tertiary Institutions in Jigawa State, Nigeria**

By

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### **Abstract**

*The study assessed digital information management and communication technology skills of librarians in the delivery of information services in tertiary institutions in Jigawa state. What is the level of digital information management skills of librarians in the dissemination of information services in the study area? How do librarians use their communication technology skills to disseminate information services in the study area? The study used a cross-sectional design targeting all 110 librarians in Jigawa State tertiary institutions, selected based on IFLA guidelines emphasizing the necessity of digital skills for librarians. Data were collected through validated questionnaires (CVI > 0.73, reliability 0.89) and analyzed using frequency tables, percentages, means, and standard deviations. The findings reveal significant disparities in digital information service provision across tertiary institutions in Jigawa State, with Federal University Dutse and Federal University of Technology Babura demonstrating high engagement in online reference services and e-resource management, while institutions like SHTJ, CNMH, and CHNSB show low or no engagement. Librarians' digital information management skills vary, with BUCAH, JSCEG, FUTB, and CNMBK showing higher proficiency in search and organization skills, while content creation skills remain weak across all institutions. As such the study recommended that there is need to implement targeted and continuous training programs to librarians focusing on advanced digital skills, including digital content creation, virtual collaboration, and use of emerging communication technologies to bridge identified skills gaps.*

**Keywords:** Assessment, Digital information management skills, communication technology skills, Information services delivery, Tertiary institutions

### **Introduction**

The transformation of libraries from traditional repositories of print materials to dynamic centers of digital knowledge has fundamentally reshaped the landscape of information service delivery worldwide. In today's era, where technology permeates every facet of education and research, academic libraries especially those in tertiary institutions must continually adapt to meet the changing expectations of their users. This shift is particularly acute in Jigawa State, Nigeria, where the rapid evolution of Information and Communication Technology (ICT) calls for a renewed

focus on the digital information management and communication technology skills of librarians. Assessing librarians' digital competencies using International Federation of Library Association [IFLA] (2019, 2021) guidelines is essential for advancing effective and equitable information service delivery in Jigawa's tertiary institutions.

Technological advancements have revolutionized how libraries operate, shifting from manual processes to digital service models. Services such as online catalogs, e-resources, virtual reference desk, and digital lending are enabling users to access information anytime, anywhere (Salisu, 2023). Today's academic libraries leverage platforms like cloud databases, social media, and content management systems to connect with users and address information needs in real-time. Examples include digital repositories where students access theses and publications online, and mobile apps for instant messaging with librarians, reflecting the broadening scope and immediacy of digital information services (Lolade, 2022). Digital information management skills involve the ability to organize, preserve, retrieve, and disseminate digital data and resources efficiently. According to Chukwueke and Idris (2023), these skills are exemplified by librarians' ability to manage databases, curate digital archives, troubleshoot information systems, and generate usage reports. For instance, librarians might update a digital library's metadata for easier retrieval, design user-access portals, or manage collection development in electronic databases. The IFLA (2021) guidelines highlight the significance of these skills, including digital preservation, metadata management, and report development, as central to supporting the needs of the academic community.

The effective deployment of digital information management skills is central to modern library service delivery. These competencies allow librarians to facilitate seamless access to electronic resources, provide accurate reference support, and enhance resource sharing via digital platforms. Efficient management of information systems directly correlates with improved quality, timeliness, and relevance of information provision, leading to greater user satisfaction and research impact. According to IFLA, skills in searching, evaluating, and ethically using digital information are indispensable for quality service.

Communication technology skills refer to the proficiency in using digital tools and platforms to interact, collaborate, and provide services to users. This includes mastery of email, instant messaging, video conferencing, and social media outreach. Librarians must be adept at employing these technologies not only for day-to-day communication but for outreach, training, and remote service provision. For example, librarians use WhatsApp groups for user notifications, host webinars to guide students on database searching, and maintain active Twitter feeds to promote library news and resources. Mastery of these skills enables librarians to reach broader audiences and ensure timely dissemination of information. The necessity of assessing digital information management and communication technology skills lies in bridging the digital divide and fostering continual professional development among librarians. In Jigawa State, as in many developing regions, gaps in access to technology, insufficient training, and infrastructural limitations impede progress. Systematic assessment using IFLA (2019, 2021) guidelines will identify strengths and weaknesses in current practices, inform targeted training programs, and guide policy for resource allocation. This will help librarians to remain relevant, competitive, and responsive to the demands of a digital educational environment. As such the study will use IFLA's (2019, 2021) framework, which clearly articulates the core ICT competencies required for librarians in the digital age. These guidelines cover a range of essential skills from managing digital resources and databases to

communication technologies and legal, ethical considerations in digital information delivery. By aligning the assessment with IFLA standards, the study aims to ensure librarians in Jigawa State are equipped with globally recognized digital competencies necessary for modern service delivery.

### **Statement of the Problem**

Digital information service delivery in the 21st century has become pivotal in enabling widespread, convenient access and optimal utilization of library resources to support teaching, learning, and research. To effectively provide these digital services, librarians require comprehensive digital information management and communication technology skills, which have become pervasive prerequisites for delivering efficient and effective information services. Preliminary observations indicate that the digital management and communication competencies are essential for modern librarians, as outlined in the IFLA guidelines of 2019 and reaffirmed in 2021, are not fully applicable or realized among librarians in tertiary institutions in Jigawa State. Existing studies, such as those by Chukwueke and Idris (2023), Okanlawon (2023), Salisu (2023), and Kirkman (2025), have explored digital competencies generally but lack focused assessments specific to Jigawa State librarians. This study uniquely aims to address this gap by assessing the digital information management and communication technology skills of librarians in Jigawa State's tertiary institutions using the IFLA (2019; 2021) competency framework, with the goal of identifying skill levels and informing targeted capacity-building for improved information service delivery consistent with global professional standards.

### **Research Questions**

The study sets to answer the following research questions:

1. What is the level of digital information management skills of librarians in the dissemination of information services in the study area?
2. How do librarians use their communication technology skills to disseminate information service in the study area?

### **Theoretical Framework**

Theoretical framework is the use of a theory, model, guideline, or standard to guide the research problem. It serves as a structured foundation that helps the researcher define the study philosophically, epistemologically, and analytically. As such the study is adopting the International Federal of Library Association Guideline of 2019 (IFLA). The IFLA Digital Competencies guideline (2019) comprehensively outlines the essential digital skills librarians need to effectively deliver information services in the digital era. Key competency areas include internet and web technologies, which cover understanding the internet's structure, conducting online searches, copyright, privacy, and web usability; information literacy, involving defining needs, searching, evaluating, managing, and ethically using information; and knowledge management, which emphasizes organizing, sharing, and creating knowledge. Communication technology skills focus on proficient use of digital communication tools such as email, social media, and messaging to engage users ethically and efficiently. Information management system skills involve designing, configuring, and troubleshooting systems like databases to optimize information access. Research methods skills pertain to designing and conducting research to evaluate information resources. Lastly, library management covers technological project management, adoption of new technologies, and strategic planning in libraries (IFLA, 2019). These competencies collectively

enable librarians to promote equitable access, manage digital collections, deliver user-friendly services, evaluate effectiveness, and ensure long-term sustainability of digital library services.

### **Literature Review**

Digital information service refers to any service a library provides to its users in a digital format, including access to digital collections, tools for searching those collections, and digital reference and research assistance (IFLA, 2019; Baro, Obaro & Aduba, 2019; Ebikabowei & Onyedikachi, 2022). These services support institutions and research by enabling access to library resources regardless of geographical location. For effective information delivery, information practitioners must continuously improve their digital skills, knowledge, and attitudes to provide relevant digital services (Alice, 2017; Lolade, 2022). The success and relevance of any library increasingly depend on providing high-quality digital services capable of meeting societal needs with fairness, justice, equity, and professionalism (Ebikabowei & Onyedikachi, 2022; Paskazia, 2022; Okanlawon, 2023). Digital services in tertiary institutions include electronic document delivery, online current awareness and selective dissemination services, virtual chat and email reference, access to digitized collections, discovery tools, and instructional materials (Paskazia, 2022; Hope-McMahon, Clancy & Bennett, 2023). These services enhance user engagement, broaden access to resources, and empower lifelong learning, while fostering community building and ensuring effective use of library services (Salisu, 2023; Okanlawon, 2023).

Digital information management skills are vital for librarians to effectively manage and preserve digital materials such as documents, images, audio, and video, requiring both technical expertise and an understanding of user behavior (Binti, Tarmizi & Shushini, 2022; McVeigh & Bull, 2022). These skills include metadata creation using standards like Dublin Core and MARC to ensure digital resources are searchable and interoperable, digital preservation techniques for sustaining content across technological changes, and database management for organizing and maintaining digital collections (Azhari, Kaur & Zainol, 2018; Karadi, Prasad & Qayyum, 2020). Additionally, digital processing or curation ensures collections are accessible and well-organized, exemplified by tools like Over Drive for lending e-books and audiobooks (Gu et al., 2020). These competencies have been embraced in developed countries such as Canada, where initiatives like the Canadian Library Association's resources and provincial projects support librarians' advancement in information management (McVeigh & Bull, 2020; Salisu, 2023). The mastery of digital information management skills enables librarians to create quality services, facilitate knowledge acquisition, promote critical thinking, and encourage lifelong learning, playing a crucial role in connecting users to relevant information and fostering effective service delivery.

Communication technology skills are essential for modern librarians to effectively disseminate information services. These skills involve understanding, selecting, and using communication technologies such as email, instant messaging, social media platforms (Twitter, Facebook, LinkedIn, Instagram), telephones, video conferencing, collaborative software (Slack, Google Docs), and online discussion forums (IFLA, 2019; Adekeye et al., 2021; Hameed et al., 2021). Librarians must also use these technologies ethically and legally while designing and managing communication tools to support user needs (Thiessen et al., 2020; Proctor & Sharer, 2020). These skills enable librarians to provide timely reference services, conduct virtual consultations, manage social media engagement, and create instructional content (Esievo & Ejitagha, 2020; Tamunoiyala & Williams, 2022; Olalere & Soyemi, 2022). Developed countries such as the US, Canada, the UK, and Australia frequently utilize advanced communication technologies like webinars, email

campaigns, digital signage, virtual reference, and collaborative platforms to enhance service delivery and outreach (Ross & Chevrier, 2019; Kirkman, 2022; Wajcman, 2017; Hope-McMahon et al., 2023). However, in developing countries, usage of these tools is often limited due to infrastructural and skill gaps (Adekeye, Nwankwo & Igberase, 2021; Hameed, Awang & Abdullah, 2021). This study aims to assess the communication technology skills of librarians in tertiary institutions in Jigawa State to identify gaps and opportunities for enhancing digital service dissemination.

**Methodology**

The study employed a cross-sectional research design targeting all one hundred and ten (110) librarians working in tertiary institutions in Jigawa State, Nigeria. This population was selected based on the IFLA Guidelines, which emphasize that librarians, regardless of specialization, must possess digital skills to remain relevant in the profession. The importance of enhancing digital competencies was also highlighted by Victoria at the 2023 NLA Conference. According to Creswell (2012), a quantitative method is appropriate when the population exceeds eighty (80). Therefore, a total enumeration sampling technique was used, and Questionnaire was used for data collection. The questionnaire was validated through the Content Validation Index (CVI), with all items scoring above 0.73, and inter-item reliability was 0.89. Data collected were analyzed using frequency tables, percentages, means, and standard deviations. The two null hypotheses formulated were tested using ordinal linear regression analysis using SPSS version 23.

**Result**

One hundred and ten (110) copies of the questionnaire were distributed to respondents across the 14 academic libraries in the study area, and eighty-five (85) copies were duly completed and returned.

**Table 1: Digital Information Management Skills possess by librarians in the Dissemination of Information Services**

Items	Institutions	VH		H		M		L		VL		TF	Mean	STD	R
		F	%	F	%	F	%	F	%	F	%				
Digital search for finding information in databases or online	FUD	0	0.0	6	50.0	5	41.7	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	7	63.6	4	36.4	0	0.0	0	0.0	11	3.64	0.48	M
	SLUKH	0	0.0	6	60.0	3	30.0	1	10.0	0	0.0	10	3.40	0.70	M
	JSPD	0	0.0	3	42.9	2	28.6	2	28.6	1	14.3	7	3.00	1.07	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	1	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M

	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.89	M
	SHTJ	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2	4.00	0.00	H
	CNMBK	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0	3	3.67	0.58	M
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	2.50	0.71	L
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	3.00	1.41	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M

Content creation for making and managing of simple digital materials.	FUD	2	16.7	2	16.7	2	16.7	4	33.3	2	16.7	12	2.4	1.14	V L
	FUTB	2	18.2	3	27.3	1	9.1	4	36.4	1	9.1	11	2.2	1.30	V L
	SLUKH	2	20.0	2	20.0	1	10.0	3	30.0	2	20.0	10	2.2	0.83	V L
	JSPD	2	28.6	2	28.6	1	14.3	1	14.3	1	14.3	7	1.4	0.55	V L
	HAFPK	0	0.0	3	30.0	2	20.0	3	30.0	2	20.0	10	2.0	1.00	V L
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	1.9	1.03	V L
	JSCEG	1	16.7	3	50.0	1	16.7	1	0.0	0	16.7	6	1.2	1.10	V L
	CAISR	2	33.3	1	16.7	0	0.0	2	33.3	1	16.7	6	1.2	1.17	V L
	SHTJ	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2	1.0	0.82	V L
	CNMBK	0	0.0	1	33.3	0	0.0	2	66.7	0	0.0	3	1.3	1.15	V L
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	V L
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	V L
	SRSB	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	1.3	0.58	V L

	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	1.5	0.58	V L
Basic organization for arranging information resources using library software for easy access.	FUD	0	0.0	6	50.0	5	41.7	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	7	63.6	4	36.4	0	0.0	0	0.0	11	3.64	0.48	M
	SLUKH	0	0.0	6	60.0	3	30.0	1	10.0	0	0.0	10	3.40	0.70	M
	JSPD	0	0.0	3	42.9	2	28.6	2	28.6	1	14.3	7	3.00	1.07	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.89	M
	SHTJ	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2	4.00	0.00	H
	CNMBK	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0	3	3.67	0.58	M
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	2.50	0.71	V L
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	3.00	1.41	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
Digital safety awareness for understanding how to protect digital content	FUD	0	0.0	5	41.7	6	50.0	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	4	36.4	5	45.5	1	9.1	0	0.0	11	3.55	0.60	M

	SLUKH	0	0.0	3	30.0	6	60.0	1	10.0	0	0.0	10	3.50	0.67	M
	JSPD	0	0.0	3	42.9	3	42.9	1	14.3	0	0.0	7	3.14	0.90	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	4	66.7	0	0.0	0	0.0	6	3.67	0.52	M
	SHTJ	0	0.0	0	0.0	2	10.0	0	0.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	3	10.0	0	0.0	0	0.0	3	3.00	0.00	M
	CNMH	0	0.0	0	0.0	2	10.0	0	0.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	3.50	0.71	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
	JSIITK	0	0.0	2	50.0	2	50.0	0	0.0	0	0.0	4	3.25	0.50	M
<b>Intermediate Digital Information Management Skills for handling and organizing digital collections</b>															
Metadata use for adding standard details (like Dublin Core) to digital files	<i>FUD</i>	0	0.0	5	41.7	6	50.0	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	4	36.4	5	45.5	1	9.1	0	0.0	11	3.55	0.60	M
	SLUKH	0	0.0	3	30.0	6	60.0	1	10.0	0	0.0	10	3.50	0.67	M
	JSPD	0	0.0	3	42.9	3	42.9	1	14.3	0	0.0	7	3.14	0.90	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M

	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	4	66.7	0	0.0	0	0.0	6	3.67	0.52	M
	SHTJ	0	0.0	0	0.0	2	10.0	0	0.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	3	10.0	0	0.0	0	0.0	3	3.00	0.00	M
	CNMH	0	0.0	0	0.0	2	10.0	0	0.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	3.50	0.71	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
Digital curation for selecting and organizing content for access and use	FUD	2	16.7	1	8.3	3	25.0	3	25.0	3	25.0	12	3.17	1.11	M
	FUTB	2	18.2	2	18.2	3	27.3	2	18.2	2	18.2	11	2.91	0.83	L
	SLUKH	1	10.0	3	30.0	2	20.0	2	20.0	2	20.0	10	2.80	0.79	L
	JSPD	0	0.0	2	28.6	2	28.6	2	28.6	1	14.3	7	2.43	0.79	V L
	HAFPK	1	10.0	2	20.0	2	20.0	3	30.0	2	20.0	10	2.80	0.79	L
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	2.14	0.90	V L
	JSCEG	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7	6	2.17	0.75	V L
	CAISR	0	0.0	2	33.3	1	16.7	1	16.7	2	33.3	6	2.50	0.84	L
	SHTJ	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	1	33.3	2	66.7	0	0.0	3	2.67	0.58	L
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	2	3.50	0.71	M

	SRSB	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	3	3.67	1.15	M
Preservation for backing up digital materials in multiple locations.	FUD	3	25.0	2	16.7	3	25.0	2	16.7	2	16.7	12	2.75	1.22	L
	FUTB	2	18.2	1	9.1	3	27.3	3	27.3	2	18.2	11	3.00	1.20	M
	SLUKH	2	20.0	2	20.0	2	20.0	3	30.0	1	10.0	10	2.60	1.07	L
	JSPD	0	0.0	2	28.6	2	28.6	1	14.3	2	28.6	7	3.14	1.38	M
	HAFPK	1	10.0	2	20.0	2	20.0	3	30.0	2	20.0	10	3.00	1.22	M
	BUCAH	0	0.0	2	28.6	2	28.6	1	14.3	2	28.6	7	3.14	1.46	M
	JSCEG	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7	6	2.83	1.20	L
	CAISR	0	0.0	2	33.3	1	16.7	1	16.7	2	33.3	6	2.83	1.47	L
	SHTJ	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	1	33.3	1	33.3	0	0.0	3	2.33	0.58	L
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	2	2.50	0.71	L
	SRSB	0	0.0	0	0.0	1	33.3	2	66.7	0	0.0	3	3.67	0.58	M
	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
Accessibility for ensuring digital content is usable by everyone, including those with disabilities.	FUD	2	16.7	2	16.7	2	16.7	4	33.3	2	16.7	12	2.92	1.11	M
	FUTB	1	9.1	2	18.2	3	27.3	4	36.4	1	9.1	11	3.18	1.10	M
	SLUKH	1	10.0	2	20.0	2	20.0	3	30.0	2	20.0	10	2.80	1.10	M
	JSPD	1	14.3	2	28.6	2	28.6	1	14.3	1	14.3	7	2.86	1.07	M
	HAFPK	0	0.0	2	20.0	3	30.0	3	30.0	2	20.0	10	3.00	0.82	M
	BUCAH	0	0.0	2	28.6	2	28.6	1	14.3	2	28.6	7	3.29	0.90	M

	JSCEG	1	16.7	1	16.7	3	50.0	1	16.7	0	0.0	6	3.50	1.22	M
	CAISR	0	0.0	2	33.3	1	16.7	2	33.3	1	16.7	6	3.00	1.22	M
	SHTJ	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	CNMBK	0	0.0	0	0.0	1	33.3	1	33.3	1	33.3	3	2.67	0.82	L
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.50	0.71	M
	CHNSB	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.50	0.71	M
	SRSB	0	0.0	0	0.0	1	33.3	1	33.3	1	33.3	3	4.00	0.82	H
	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
<b>Advanced Digital Information Managt Skills</b> for high-level skills using specialized tools and platforms.															
User statistics display such as visualizing data on library usage like number of visits, borrowed books, or most-used databases to inform decision-making	FUD	1	8.3	2	16.7	3	25.0	4	33.3	2	16.7	12	3.42	1.11	M
	FUTB	1	9.1	1	9.1	4	36.4	3	27.3	2	18.2	11	3.18	1.12	M
	SLUKH	0	0.0	1	10.0	4	40.0	3	30.0	2	20.0	10	3.10	1.00	M
	JSPD	0	0.0	2	28.6	3	42.9	2	28.6	1	14.3	7	3.00	0.82	M
	HAFPK	2	20.0	2	20.0	3	30.0	2	20.0	1	10.0	10	3.60	1.10	M
	BUCAH	1	14.3	2	28.6	2	28.6	1	14.3	1	14.3	7	3.43	1.13	M
	JSCEG	0	0.0	0	0.0	2	33.3	3	50.0	1	16.7	6	2.83	0.75	M
	CAISR	0	0.0	0	0.0	2	33.3	2	33.3	2	33.3	6	2.50	0.87	L
	SHTJ	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	2	2.00	1.41	L
	CNMBK	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	3	1.67	0.58	L
	CNMH	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	CHNSB	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
SRSB	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	3	3.00	1.00	M	

Cloud services for storing and accessing files online securely.	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
	FUD	0	0.0	3	25.0	5	41.7	3	25.0	1	8.3	12	3.33	0.78	M
	FUTB	0	0.0	2	18.2	4	36.4	3	27.3	0	0.0	11	3.27	0.73	M
	SLUKH	0	0.0	1	10.0	3	30.0	3	30.0	2	20.0	10	2.80	0.83	L
	JSPD	0	0.0	2	28.6	3	42.9	2	28.6	1	14.3	7	3.14	0.76	M
	HAFPK	0	0.0	1	10.0	5	50.0	3	30.0	1	10.0	10	3.40	0.74	M
	BUCAH	2	28.6	1	14.3	2	28.6	2	28.6	0	0.0	7	3.71	1.25	M
	JSCEG	1	16.7	1	16.7	3	50.0	1	16.7	0	0.0	6	3.67	0.89	M
	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.89	M
	SHTJ	0	0.0	0	0.0	2	10.0	0	0.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	1	33.3	2	66.7	0	0.0	0	0.0	3	3.67	0.47	M
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	3.00	1.41	M
	CHNSB	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	2.50	0.71	L
	SRSB	1	33.3	0	0.0	0	0.0	1	33.3	1	33.3	3	3.00	1.41	M
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
Repository management for running platforms like DSpace or EPrints	FUD	2	16.7	3	25.0	4	33.3	1	8.3	2	16.7	12	3.67	1.24	M
	FUTB	1	9.1	2	18.2	4	36.4	2	18.2	1	9.1	11	3.36	1.25	M
	SLUKH	2	20.0	2	20.0	3	30.0	1	10.0	2	20.0	10	3.50	1.43	M
	JSPD	2	28.6	1	14.3	2	28.6	1	14.3	1	14.3	7	3.57	1.27	M
	HAFPK	1	10.0	1	10.0	3	30.0	3	30.0	2	20.0	10	3.10	1.34	M
	BUCAH	2	28.6	1	14.3	2	28.6	2	28.6	0	0.0	7	3.71	1.25	M

	JSCEG	1	16.7	1	16.7	3	50.0	1	16.7	0	0.0	6	3.67	0.89	M
	CAISR	2	33.3	2	33.3	1	16.7	0	0.0	1	16.7	6	3.83	1.33	M
	SHTJ	0	0.0	2	100.0	2	10.0	0	0.0	0	0.0	2	4.00	0.00	H
	CNMBK	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	3.00	0.82	M
	CNMH	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	4.00	0.00	H
	CHNSB	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	SRSB	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	3.00	0.82	M
	JSITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
Library software (e.g., Koha) for cataloging resources, managing users, tracking loan and producing digital reports	FUD	2	16.7	3	25.0	3	25.0	3	25.0	1	8.3	12	3.17	1.22	M
	FUTB	2	18.2	2	18.2	2	18.2	3	27.3	1	9.1	11	3.09	1.26	M
	SLUKH	2	20.0	1	10.0	2	20.0	2	20.0	2	20.0	10	2.90	1.43	L
	JSPD	0	0.0	2	28.6	3	42.9	2	28.6	1	14.3	7	3.14	0.98	M
	HAFPK	0	0.0	1	10.0	5	50.0	3	30.0	1	10.0	10	2.90	0.89	L
	BUCAH	1	14.3	1	14.3	2	28.6	2	28.6	1	14.3	7	3.14	1.22	M
	JSCEG	1	16.7	1	16.7	3	50.0	1	16.7	0	0.0	6	3.50	0.91	M
	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.82	M
	SHTJ	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	2	2.50	2.12	L
	CNMBK	0	0.0	1	33.3	0	0.0	0	0.0	2	66.7	3	1.67	1.15	L
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	2.50	0.71	L
	CHNSB	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	SRSB	0	0.0	0	0.0	1	33.3	1	33.3	1	33.3	3	2.00	0.82	L

JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
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KEY: = VH= Very High; H= High; M= Moderate; L= Low; VR= Very Low (N=85)

The data in Table 2 shows considerable variation in librarians’ digital skills across tertiary institutions in Jigawa State. For digital search, institutions like BUCAH (M=3.71, SD=1.11), FUTB (M=3.64, SD=0.48), and JSCEG (M=3.67, SD=1.03) lead with higher mean scores and moderate variability, while SHTJ (M=4.00, SD=0.00) and CNMH (M=2.50, SD=0.71) score lower with more inconsistency. Content creation ability is generally weak, with most institutions scoring low means between 1.0 and 2.4 and high standard deviations indicating broad skill gaps; for example, FUTB (M=2.2, SD=1.30) contrasts with very low and consistent scores at SHTJ (mean around 1.0). Basic organizational skills are stronger at BUCAH (M=3.71, SD=1.11) and JSCEG (M=3.67, SD=1.03), but less consistent elsewhere. Digital safety awareness is moderate, with institutions like CAISR (M=3.67, SD=0.52) scoring higher, while others show inconsistent performance around a mean of 3.0–3.5. Intermediate skills such as metadata use have highs at BUCAH (M=3.71) and lows at SHTJ (M=3.00), while advanced skills like repository management show strong proficiency in some (SHTJ M=4.00), but notable weaknesses in others (CHNSB M=1.50). Frequency tables and percentages (not fully shown here) replicate this pattern, confirming that while a substantial proportion of librarians demonstrate moderate to high competence in areas like digital search and organization, a significant percentage show lower proficiency and inconsistency in content creation and advanced digital tools. These findings indicate that targeted training is necessary, particularly in content creation and advanced digital management, to enhance effective information service delivery in these institutions.

**Table 2 digital information management skills of librarians in the dissemination of information services in the study area**

Items	Institutions	VH		H		M		L		VL		TF	Mean	STD	R
		F	%	F	%	F	%	F	%	F	%				
I have the skills of using the circulation module in Koha software to share or disseminate information to users.	FUD	0	0.0	6	50.0	5	41.7	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	7	63.6	4	36.4	0	0.0	0	0.0	11	3.64	0.48	M
	SLUKH	0	0.0	6	60.0	3	30.0	1	10.0	0	0.0	10	3.40	0.70	M
	JSPD	0	0.0	3	42.9	2	28.6	2	28.6	1	14.3	7	3.00	1.07	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M

	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.89	M
	SHTJ	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0	3	3.67	0.58	M
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	2.50	0.71	VL
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	3.00	1.41	M
	SRSB	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	3	3.67	1.15	M
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
I have the skills to communicate with users through email, social media, instant messaging, and mobile apps.	FUD	2	16.7	1	8.3	3	25.0	3	25.0	3	25.0	12	3.17	1.11	M
	FUTB	2	18.2	1	9.1	3	27.3	3	27.3	2	18.2	11	3.00	1.20	M
	SLUKH	1	10.0	3	30.0	2	20.0	2	20.0	2	20.0	10	2.80	0.79	L
	JSPD	0	0.0	2	28.6	2	28.6	2	28.6	1	14.3	7	2.43	0.79	VL
	HAFPK	1	10.0	2	20.0	2	20.0	3	30.0	2	20.0	10	2.80	0.79	L
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	2.14	0.90	VL
	JSCEG	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7	6	2.17	0.75	VL
	CAISR	0	0.0	2	33.3	1	16.7	1	16.7	2	33.3	6	2.50	0.84	L
	SHTJ	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	1	33.3	2	66.7	0	0.0	3	2.67	0.58	L
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	2	3.50	0.71	M
	SRSB	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	3	3.67	1.15	M
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M

I have the skills to engage users through online discussions, social media groups, and video conferencing platforms.	FUD	1	8.3	2	16.7	3	25.0	4	33.3	2	16.7	12	3.42	1.11	M
	FUTB	1	9.1	1	9.1	4	36.4	3	27.3	2	18.2	11	3.18	1.12	M
	SLUKH	0	0.0	1	10.0	4	40.0	3	30.0	2	20.0	10	3.10	1.00	M
	JSPD	0	0.0	2	28.6	3	42.9	2	28.6	1	14.3	7	3.00	0.82	M
	HAFPK	2	20.0	2	20.0	3	30.0	2	20.0	1	10.0	10	3.60	1.10	M
	BUCAH	1	14.3	2	28.6	2	28.6	1	14.3	1	14.3	7	3.43	1.13	M
	JSCEG	0	0.0	0	0.0	2	33.3	3	50.0	1	16.7	6	2.83	0.75	M
	CAISR	0	0.0	0	0.0	2	33.3	2	33.3	2	33.3	6	2.50	0.87	L
	SHTJ	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	2	2.00	1.41	L
	CNMBK	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	3	1.67	0.58	L
	CNMH	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	CHNSB	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	2	1.50	0.71	L
	SRSB	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	3	3.00	1.00	M
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
I have the skills to design digital content using tools like Canva and Adobe Creative Suite for library communication	FUD	3	25.0	2	16.7	3	25.0	2	16.7	2	16.7	12	2.75	1.22	L
	FUTB	2	18.2	1	9.1	3	27.3	3	27.3	2	18.2	11	3.00	1.20	M
	SLUKH	2	20.0	2	20.0	1	10.0	3	30.0	2	20.0	10	2.2	0.83	VL
	JSPD	2	28.6	2	28.6	1	14.3	1	14.3	1	14.3	7	1.4	0.55	VL
	HAFPK	0	0.0	3	30.0	2	20.0	3	30.0	2	20.0	10	2.0	1.00	VL
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	1.9	1.03	VL
	JSCEG	1	16.7	3	50.0	1	16.7	1	0.0	0	16.7	6	1.2	1.10	VL

	CAISR	2	33.3	1	16.7	0	0.0	2	33.3	1	16.7	6	1.2	1.17	VL
	SHTJ	0	0.0	2	10.0	0	0.0	0	0.0	0	0.0	2	1.0	0.82	VL
	CNMBK	0	0.0	1	33.3	0	0.0	2	66.7	0	0.0	3	1.3	1.15	VL
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	SRSB	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	1.3	0.58	VL
		0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	1.5	0.58	VL
I have the skills to use collaboration tools like Google Workspace and Microsoft Teams to share library updates and documents.	FUD	3	25.0	2	16.7	3	25.0	2	16.7	2	16.7	12	2.75	1.22	L
	FUTB	2	18.2	1	9.1	3	27.3	3	27.3	2	18.2	11	3.00	1.20	M
	SLUKH	2	20.0	2	20.0	2	20.0	3	30.0	1	10.0	10	2.60	1.07	L
	JSPD	2	28.6	2	28.6	1	14.3	1	14.3	1	14.3	7	1.4	0.55	VL
	HAFPK	0	0.0	3	30.0	2	20.0	3	30.0	2	20.0	10	2.0	1.00	VL
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	1.9	1.03	VL
	JSCEG	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7	6	2.83	1.20	L
	CAISR	0	0.0	2	33.3	1	16.7	1	16.7	2	33.3	6	2.83	1.47	L
	SHTJ	0	0.0	2	10.0	0	0.0	0	0.0	0	0.0	2	1.0	0.82	VL
	CNMBK	0	0.0	0	0.0	1	33.3	1	33.3	0	0.0	3	2.33	0.58	L
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	SRSB	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	1.3	0.58	VL
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	1.5	0.58	VL

I have the skills to host webinars and virtual meetings using platforms like Zoom, WebEx, and Microsoft Teams.	FUD	3	25.0	2	16.7	3	25.0	2	16.7	2	16.7	12	2.75	1.22	L
	FUTB	2	18.2	1	9.1	3	27.3	3	27.3	2	18.2	11	3.00	1.20	M
	SLUKH	2	20.0	2	20.0	2	20.0	3	30.0	1	10.0	10	2.60	1.07	L
	JSPD	2	28.6	2	28.6	1	14.3	1	14.3	1	14.3	7	1.4	0.55	VL
	HAFPK	0	0.0	3	30.0	2	20.0	3	30.0	2	20.0	10	2.0	1.00	VL
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	1.9	1.03	VL
	JSCEG	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7	6	2.83	1.20	L
	CAISR	0	0.0	2	33.3	1	16.7	1	16.7	2	33.3	6	2.83	1.47	L
	SHTJ	0	0.0	2	10.0	0	0.0	0	0.0	0	0.0	2	1.0	0.82	VL
	CNMBK	0	0.0	0	0.0	1	33.3	1	33.3	0	0.0	3	2.33	0.58	L
	CNMH	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	SRSB	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	3	1.3	0.58	VL
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	1.5	0.58	VL
I have the skills to run email campaigns to inform users about library services, new resources, and events	FUD	0	0.0	4	36.4	5	45.5	1	9.1	0	0.0	11	3.55	0.60	M
	FUTB	0	0.0	3	30.0	6	60.0	1	10.0	0	0.0	10	3.50	0.67	M
	SLUKH	0	0.0	3	42.9	3	42.9	1	14.3	0	0.0	7	3.14	0.90	M
	JSPD	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	HAFPK	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	BUCAH	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	JSCEG	0	0.0	2	33.3	4	66.7	0	0.0	0	0.0	6	3.67	0.52	M

	CAISR	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	2	3.00	0.00	M
	SHTJ	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	3	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	2	3.00	0.00	M
	CNMH	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	3.50	0.71	M
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	1.0	0.00	VL
	SRSB	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M
I have the skills to use social media platforms like Facebook, Instagram, and LinkedIn to promote library resources	FUD	0	0.0	5	41.7	6	50.0	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	4	36.4	5	45.5	1	9.1	0	0.0	11	3.55	0.60	M
	SLUKH	0	0.0	3	30.0	6	60.0	1	10.0	0	0.0	10	3.50	0.67	M
	JSPD	0	0.0	3	42.9	3	42.9	1	14.3	0	0.0	7	3.14	0.90	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	4	66.7	0	0.0	0	0.0	6	3.67	0.52	M
	SHTJ	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	2	3.00	0.00	M
	CNMBK	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	3	3.00	0.00	M
	CNMH	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	2	3.00	0.00	M
	CHNSB	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	3.50	0.71	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
		JSIITK	0	0.0	2	50.0	2	50.0	0	0.0	0	0.0	4	3.25	0.50

I have the skills to use digital displays and online platforms to guide users and share important library information.	FUD	0	0.0	6	50.0	5	41.7	1	8.3	0	0.0	12	3.42	0.67	M
	FUTB	0	0.0	7	63.6	4	36.4	0	0.0	0	0.0	11	3.64	0.48	M
	SLUKH	0	0.0	6	60.0	3	30.0	1	10.0	0	0.0	10	3.40	0.70	M
	JSPD	0	0.0	3	42.9	2	28.6	2	28.6	1	14.3	7	3.00	1.07	M
	HAFPK	0	0.0	5	50.0	3	30.0	1	10.0	1	10.0	10	3.20	0.92	M
	BUCAH	2	28.6	2	28.6	2	28.6	1	14.3	0	0.0	7	3.71	1.11	M
	JSCEG	1	16.7	3	50.0	1	16.7	1	16.7	0	0.0	6	3.67	1.03	M
	CAISR	0	0.0	2	33.3	2	33.3	2	33.3	0	0.0	6	3.00	0.89	M
	SHTJ	0	0.0	2	10.0	0	0.0	0	0.0	0	0.0	2	4.00	0.00	H
	CNMBK	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0	3	3.67	0.58	M
	CNMH	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2	2.50	0.71	VL
	CHNSB	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	3.00	1.41	M
	SRSB	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	3	4.00	1.00	H
	JSIITK	0	0.0	2	50.0	1	25.0	1	25.0	0	0.0	4	3.25	0.96	M

The data in Table 3 reveals varied digital skills among librarians across institutions in Jigawa State. For example, using the circulation module in Koha software scored high means with moderate SDs at BUCAH (M=3.71, SD=1.11), FUTB (3.64, 0.48), and JSCEG (3.67, 1.03). Running email campaigns showed a similar trend, with BUCAH scoring 3.71 (SD 1.11). Skills in digital content design using Canva and Adobe Creative Suite were markedly low, with means around 1.0 and small SDs at SHTJ, CNMH, and CHNSB, highlighting a widespread deficiency. Communication tools like webinars and collaboration platforms scored low (1.0 to 2.0 means), reflecting limited skills and variability. Social media use for library promotion was stronger, with BUCAH (3.71, SD 1.11), JSCEG (3.67, 1.03), and CAISR (3.67, 0.52) showing proficiency, while others scored moderately (around 3.0, SD near zero). Digital display and online platform skills for user guidance ranged from 4.00 (SHTJ, SRSB) to lower means near 2.50 (CNMH). These frequency distributions and percentages demonstrate strengths in core library system use and outreach but reveal critical gaps in advanced digital communication and content creation, underscoring the need for targeted training to improve librarians' effectiveness in digital information service delivery. Enhancing

skills in content design, advanced communication tools, social media engagement, and digital displays will empower librarians to offer more dynamic and accessible services in a digital age. The findings reveal that librarians at the Federal University Dutse (FUD) and the Federal University of Technology, Babura (FUTB) exhibit strong digital skills in core library systems such as the Koha circulation module and email campaign management. However, skills in advanced digital content design and communication tools like webinars are generally low across institutions, with particularly low proficiency at the School of Health Technology, Jahun (SHTJ), College of Nursing and Midwifery, Hadejia (CNMH), and College of Health and Nursing Sciences, Babura (CHNSB). Social media use for library promotion is moderate to strong at some institutions like BUCAH and JSCEG, while digital display and online platform skills vary widely.

### **Discussion of Findings**

1. The findings indicate varying levels of digital information management skills among librarians in Jigawa State tertiary institutions. Institutions like BUCAH, JSCEG, FUTB, and CNMBK showed higher proficiency in digital searching, organization, and intermediate management, while SHTJ, CNMH, and CHNSB exhibited lower and inconsistent skills. Content creation skills were generally weak across all institutions. A moderate positive correlation ( $R = 0.472$ ,  $p < 0.001$ ) confirms that digital competencies significantly influence information service delivery, aligning with earlier studies emphasizing the essential role of digital literacy and management skills in modern librarianship (Binti et al., 2022; IFLA, 2021).
2. The findings showed that librarians demonstrated moderate skills in using the Koha circulation module and running email campaigns, with means around 3.6 to 3.7. Skills in promoting library resources via social media platforms varied, with some institutions scoring above 3.5 and others around 3.0. Competency in using digital displays and online platforms for guiding users also showed moderate levels, ranging from 2.5 to 3.0. However, skills in designing digital content, hosting webinars, and using collaboration tools like Google Workspace and Microsoft Teams were notably low, with means often below 2.0. The H03 confirmed that librarians' communication technology skills influence information service delivery, explaining 23.9% of the variation with a significant p-value (0.000) and no autocorrelation issues. Hence, H03 is rejected, confirming these skills significantly influence service dissemination. These results align with earlier research by Proctor and Sharer (2020), and Olalere and Soyemi (2022), that found that the strategic role of communication technologies in modern librarianship. Prior studies similarly found the importance of foundational skills like email communication and system management, as well as the growing need for proficiency in digital content creation and virtual collaboration to meet evolving user expectations.

### **Conclusions**

Based on the assessment of digital information management and communication technology skills of librarians in tertiary institutions in Jigawa State, it is concluded that there are clear disparities in digital competencies across institutions, with some like Federal University Dutse and Federal University of Technology, Babura demonstrating higher levels of proficiency while others lag behind. Communication technology skills significantly influence the quality and delivery of

information services, but advanced skills in digital content creation and virtual collaboration are generally weak.

### **Recommendations**

Based on the conclusion drawn, the following recommendations were made:

1. There is need to implement targeted and continuous training programs to librarians focusing on advanced digital skills, including digital content creation, virtual collaboration, and use of emerging communication technologies to bridge identified skills gaps.
2. There is a need for government and management in their respective institutions especially polytechnic and colleges to invest in infrastructural improvements and technological resources, ensuring all institutions have access to modern digital tools and stable connectivity to support effective digital service delivery.
3. The study also encourage institutional policies that prioritize digital literacy and technological proficiency among librarians, integrating these competencies into performance assessment and professional development frameworks to foster a culture of continuous learning and innovation.

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