

RELATIONSHIP BETWEEN TEACHER-LIBRARIANS ATTITUDES TOWARDS INFORMATION TECHNOLOGY AND INFORMATION PROVISION IN THE COLLEGE OF EDUCATION, AKWANGA, NASARAWA STATE, NIGERIA

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ARTICLE INFO

Article No.: 0641

Accepted Date: 02/09/2026

Published Date: 15/10/2026

Type: Research

ABSTRACT

This study examined teacher-librarians' attitudes towards information technology (IT) and their relationship with information provision at the College of Education, Akwanga, Nasarawa State. A correlational survey design was adopted. Three research questions guided the study, while three null hypotheses were tested at the 0.05 level of significance. The population comprised 32 library personnel, from whom 30 completed questionnaires were retrieved and analyzed. Data were collected using the Teacher-Librarians' Attitude towards Information Technology and Information Provision Questionnaire (TLATITIPQ). Mean and standard deviation were used to answer the descriptive research questions, while Pearson Product-Moment Correlation was used to test the hypotheses. The findings showed that teacher-librarians had positive attitudes towards IT ($M = 3.65$) and utilized IT to a high extent ($M = 3.02$). Significant positive relationships were found between IT attitude and effective information provision ($r = .71, p < .001$), IT utilization and effective information provision ($r = .76, p < .001$), and institutional support and IT attitude ($r = .63, p < .001$). The study concluded that positive IT attitudes, higher IT utilization, and institutional support were associated with more effective information provision. It was recommended that the College strengthen ICT infrastructure and provide continuous professional development to enhance technology-supported library services.

Keywords: Teacher-librarians, Information Technology, Information Provision, Academic Libraries, College of Education

Introduction

Information has become an essential resource for teaching, learning, research, innovation, planning, and institutional decision-making. The rapid advancement of information technology (IT) has transformed how information is created, stored, retrieved, evaluated, communicated, and disseminated. Consequently, academic libraries have moved beyond conventional print collections and manual operations towards technology-supported environments involving electronic books and journals, online databases, automated catalogues, institutional repositories, digital archives, social media platforms, and virtual reference services. UNESCO (2023) emphasized that educational technology can enhance access to information and learning when supported by appropriate infrastructure, digital competencies, policies, and institutional conditions. This transformation has expanded the responsibilities of library personnel to include electronic resource management, database searching, digital information retrieval, digital literacy support, online reference services, and repository management.

In this study, teacher-librarians refer specifically to library personnel at the College of Education, Akwanga, who organize, manage, retrieve, and provide information resources to students, lecturers, researchers, and other users. Their effectiveness in information provision is increasingly influenced by their attitudes towards technology, technological competence, access to appropriate facilities, and institutional support. Information technology in library services encompasses computer hardware and software, internet facilities, communication networks, automated library systems, electronic databases, digital repositories, social media platforms, cloud-based applications, and electronic communication tools. These technologies can facilitate faster information retrieval, broaden access to resources, improve communication, and enhance the efficiency of library services.

Shikali et al. (2024), in a systematic review of library information access in Africa, reported that academic libraries used websites, social media, email, video conferencing, and electronic resources to sustain information services. However, inadequate internet connectivity, insufficient ICT devices, limited electronic collections, and inadequate digital literacy remained significant challenges. This suggests that effective technology-supported information provision depends not only on the availability of IT facilities but also on users' competencies and the conditions under which technologies are utilized.

Empirical studies have also demonstrated the importance of technology in library operations. Amadi (2023) reported that librarians in public university libraries in South-East Nigeria possessed considerable knowledge of online information resources and related technologies, although some available resources were not fully utilized. Similarly, Okorigbo and Kanu (2022) found that digitized academic library management required competencies in digital content delivery, information retrieval, navigation, and preservation. These findings indicate that technological resources alone do not guarantee effective utilization. Library personnel require appropriate skills and positive perceptions of technology, while institutions need to provide adequate infrastructure, training, technical assistance, and supportive working conditions.

Adekoya and Inyang (2023) highlighted the importance of organizational and professional factors in ICT adoption among academic libraries in Nigeria. Other Nigerian studies have identified inadequate funding, unreliable electricity supply, subscription costs, limited technical support, rapid technological changes, and insufficient training as challenges affecting technology-supported library services. These constraints may limit the capacity of library personnel to integrate IT effectively into information provision, even where positive attitudes towards technology exist.

Despite the growing literature on IT and library services, much of the Nigerian evidence has focused on university libraries or broad categories of academic libraries. Relatively limited empirical attention has been given to library personnel in Colleges of Education, particularly regarding the relationships among IT attitudes, IT utilization, institutional support, and information provision. This represents a contextual gap because Colleges of Education play important roles in teacher preparation and require effective information services to support teaching, learning, research, and professional development. The College of Education, Akwanga, therefore provides an important context for examining technology-supported information provision among teacher-librarians.

The study is anchored on the Technology Acceptance Model (TAM) developed by Davis (1989). TAM explains technology acceptance primarily through perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that using technology will enhance job performance, while perceived ease of use concerns the extent to which the technology is perceived as requiring minimal effort. The model is relevant because library personnel who perceive IT as useful for information retrieval, resource management, reference services, communication, and information dissemination may develop more favourable attitudes towards its use. Similarly, technologies perceived as easy to operate may encourage greater utilization.

Institutional conditions are also important to technology-supported library services. Access to ICT infrastructure, reliable internet connectivity, technical assistance, professional training, adequate electronic resources, maintenance, and organizational support can facilitate effective technology utilization. Therefore, this study examines teacher-librarians' attitudes towards IT and information provision at the College of Education, Akwanga, Nasarawa State, focusing on IT attitudes, extent of IT utilization, institutional support, and their relationships with information provision. The findings are expected to provide empirical evidence for staff development, ICT infrastructure planning, institutional support, and improvement of technology-supported library and information services.

Statement of the Problem

The rapid development of information technology (IT) has transformed library services, increasing the demand for timely and accessible digital information. Consequently, teacher-librarians require adequate technological skills and positive attitudes to utilize electronic journals, databases, automated catalogues, repositories, and internet services effectively. However, the availability of IT facilities does not guarantee effective utilization. Factors such as inadequate infrastructure, poor internet connectivity, unreliable electricity, limited technical support, insufficient skills, and negative attitudes may hinder technology adoption (IFLA, 2024; Amadi, 2023). At the College of Education, Akwanga, the extent to which teacher-librarians accept and utilize IT for information provision remains insufficiently established. It is also unclear whether their attitudes influence the effectiveness of information services. Therefore, this study investigates teacher-librarians' attitudes towards IT, their utilization of technological tools, the role of institutional support and the relationship between IT attitudes and information provision at the College of Education, Akwanga, Nasarawa State.

Purpose of the Study

The main purpose of this study was to investigate teacher-librarians' attitudes towards information technology and its relationship with information provision at the College of Education, Akwanga, Nasarawa State. Specifically, the study sought to:

1. determine the attitude of teacher-librarians towards information technology in information provision at the College of Education, Akwanga;
2. To what extent do teacher-librarians utilization technology in information provision?
3. determine the relationship between institutional support and teacher-librarians' attitudes towards information technology in information provision at the College of Education, Akwanga.

Research Questions

The following research questions guided the study:

1. What is the attitude of teacher-librarians towards information technology in information provision?
2. What relationship exists between information technology utilization and effective information provision?
3. What relationship exists between teacher-librarians' attitudes towards information technology and effective information provision?

Research Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

H01: There is no significant relationship between teacher-librarians' attitudes towards information technology and effective information provision at the College of Education, Akwanga.

H02: There is no significant relationship between information technology utilization and effective information provision by teacher-librarians at the College of Education, Akwanga.

H03: There is no significant relationship between institutional support and teacher-librarians' attitudes towards information technology in information provision at the College of Education, Akwanga.

Methodology

The study adopted a correlational survey research design because it sought to obtain information from teacher-librarians on their attitudes towards information technology (IT), extent of IT utilization, and effectiveness of information provision without manipulating the study variables. Creswell and Creswell (2023) noted that descriptive survey designs are appropriate for examining existing conditions, perceptions, attitudes, and practices within a population. The study was conducted at the College of Education, Akwanga, Nasarawa State, Nigeria, a teacher-training institution in North-Central Nigeria. The College library provides textbooks, journals, reference materials, electronic resources, internet facilities, and other information services, making it appropriate for examining technology-related library practices. The population comprised 32 library personnel working in the institution during the 2024/2025 academic session. Because the population was small and manageable, entire population was studied through total enumeration.

However, 30 properly completed questionnaires were retrieved and analyzed, representing a 93.75% response rate. Data were collected using a structured questionnaire titled Teacher-Librarians' Attitude towards Information Technology and Information Provision Questionnaire (TLATITIPQ). The instrument comprised four sections. Section A collected demographic information, while Section B measured attitudes towards IT, including perceived usefulness, convenience, confidence, willingness to use technology, and readiness to acquire new skills. Section C examined IT utilization in library services, including library automation systems, Online Public Access Catalogues (OPAC), internet resources, electronic databases, digital repositories, and social media. Section D assessed effective technology-supported

information provision in terms of speed and accuracy of information retrieval, accessibility, user satisfaction, and support for teaching, learning, and research. Items were rated on a four-point Likert scale ranging from Strongly Agree (4) to Strongly Disagree (1). The TLATITIPQ was validated by three experts in Library and Information Science, Educational Technology, and Measurement and Evaluation from Benue State University. The experts assessed the instrument for clarity, relevance, adequacy of coverage, response format, and alignment with the study objectives. Their recommendations were incorporated before administration. Reliability was established through a pilot study involving 15 library personnel from a College of Education outside the study area. Cronbach's alpha coefficients were 0.86 for Attitude towards IT, 0.82 for IT Utilization, 0.88 for Effective Information Provision, and 0.85 overall, indicating satisfactory internal consistency. The researchers personally administered the questionnaires with assistance from library management. Respondents were informed of the study's purpose, participation was voluntary, and confidentiality was assured. Of the 32 questionnaires distributed, 30 were properly completed and retrieved. Data were analyzed using mean, standard deviation, and Pearson Product Moment Correlation (PPMC). Mean and standard deviation were used to answer Research Questions One and Two, with a criterion mean of 2.50: scores of 2.50 and above indicated acceptance or high extent, while scores below 2.50 indicated rejection or low extent. PPMC was used to answer Research Question Three and test the three null hypotheses at the 0.05 level of significance. The null hypothesis was rejected when $p < .05$ and retained when $p \geq .05$.

Results

Research Question One

What is the attitude of teacher-librarians towards information technology in information provision at the College of Education, Akwanga?

Table 1: Mean and Standard Deviation of Teacher-Librarians' Attitude towards Information Technology

S/N	Item Statement	M	SD	Decision
1	Information technology improves the quality of library services.	3.63	0.49	Accepted
2	I enjoy using ICT tools for information provision.	3.47	0.57	Accepted
3	Information technology makes my professional duties easier.	3.70	0.46	Accepted
4	I am willing to learn new technological skills.	3.77	0.43	Accepted
5	ICT adoption is important for modern library operations.	3.83	0.38	Accepted
6	I feel confident using information technology in performing my library duties.	3.57	0.50	Accepted
7	Information technology makes information retrieval faster and easier.	3.67	0.48	Accepted
8	I am willing to adopt new technological applications in library services.	3.60	0.50	Accepted
9	Learning new ICT applications is important for my professional development.	3.73	0.45	Accepted
10	I prefer using electronic information resources when providing services to library users.	3.53	0.51	Accepted
Grand Mean		3.65	0.43	Positive Attitude

Table 1 shows that teacher-librarians demonstrated a positive attitude towards information technology, with a grand mean of 3.65. The highest mean was recorded for the view that ICT adoption is important for modern library operations (3.83), followed by willingness to learn new technological skills (3.77). The lowest mean was recorded for enjoyment of using ICT tools for information provision (3.47). Overall, the results indicate that teacher-librarians generally recognize the usefulness of information technology and show willingness to integrate it into their professional activities.

Research Question Two

1. To what extent do teacher-librarians utilize information technology in information provision at the College of education, Akwanga?

Table 2: Mean and Standard Deviation of ICT Utilization

S/N	ICT Application	M	SD	Decision
1	Use of internet resources	3.50	0.56	High Extent
2	Use of library automation system	3.13	0.72	High Extent
3	Use of electronic databases	2.87	0.68	High Extent
4	Use of digital repositories	2.73	0.69	High Extent
5	Online reference services	2.83	0.74	High Extent
6	Use of Online Public Access Catalogue (OPAC) for information retrieval	3.20	0.61	High Extent
7	Use of electronic journals for providing information to library users	3.07	0.64	High Extent
8	Use of social media platforms to communicate information to library users	2.80	0.73	High Extent
9	Use of email and electronic communication tools to respond to users' information needs	3.17	0.65	High Extent
10	Use of digital library platforms to provide remote access to information resources	2.90	0.70	High Extent
Grand Mean		3.02	0.67	High Extent

Table 2 indicates that teacher-librarians utilize information technology at a high, extent with a grand mean of 3.02. Internet resources recorded the highest mean (3.50), followed by OPAC (3.20) and email/electronic communication tools (3.17). The lowest mean was recorded for digital repositories (2.73), followed by social media platforms (2.80). This suggests that although IT is generally utilized for information provision, greater attention may be required to improve the use of digital repositories and other relatively less-utilized technologies.

Research Question Three

What relationship exists between teacher-librarians' attitudes towards information technology and effective information provision?

Table 3: Relationship between IT Attitude and Information Provision

Variables	N	Mean	SD	Correlation (r)	Decision
IT Attitude	30	3.65	0.42		
Effective Information Provision	30	3.54	0.51	0.71	Positive Relationship

Table 3, indicates a strong positive relationship between teacher-librarians' attitudes towards information technology and effective information provision ($r = 0.71$). This suggests that teacher-librarians who demonstrate more positive attitudes towards information technology tend to report more effective information provision.

Hypothesis One

H01: There is no significant relationship between teacher-librarians' attitudes towards information technology and effective information provision at the College of Education, Akwanga.

Table 4: Pearson Product Moment Correlation Analysis of Teacher-Librarians' IT Attitude and Effective Information Provision

Variables	N	Mean	SD	r-value	p-value	Decision
Teacher-librarians' attitude towards IT	30	3.65	0.42	0.71	< .001	Rejected
Effective information provision	30	3.54	0.51			

Significant at $p < 0.05$

Table 4 shows a correlation coefficient of $r = 0.71$ and a p-value of $< .001$. Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates a statistically significant positive relationship between teacher-librarians' attitudes towards information technology and effective information provision at the College of Education, Akwanga. Thus, teacher-librarians with more positive attitudes towards IT tend to report more effective technology-supported information provision.

Hypothesis Two

H02: There is no significant relationship between information technology utilization and effective information provision by teacher-librarians at the College of Education, Akwanga.

Table 5: Pearson Correlation Analysis of the Relationship between IT Utilization and Effective Information Provision

Variables	N	Mean	SD	r-value	p-value	Decision
Information technology utilization	30	3.02	0.46			
Effective information provision	30	3.65	0.51	0.76	.001	Rejected

Significant at $p < 0.05$

Table 5 indicates a correlation coefficient of $r = 0.76$ and a p-value of .001, which is less than the 0.05 level of significance. Therefore, the null hypothesis was rejected. The result indicates that there is a significant positive relationship between information technology utilization and effective information provision. This suggests that higher IT utilization was associated with more effective information provision

Hypothesis Three

H03: There is no significant relationship between institutional support and teacher-librarians' attitudes towards information technology in information provision.

Table 6: Pearson Correlation Analysis of Institutional Support and Teacher-Librarians' IT Attitude

Variables	N	Mean	SD	r-value	p-value	Decision
Institutional support	30	2.89	0.55			
Teacher-librarians' IT attitude	30	3.68	0.42	0.63	0.001	Rejected

Significant at $p < 0.05$

The result in Table 6 shows that institutional support had a significant positive relationship with teacher-librarians' attitudes towards information technology ($r = 0.63$, $p = 0.001$). Since the p-value is less than 0.05, the null hypothesis was rejected. This implies that adequate institutional support, including ICT infrastructure, training opportunities, technical assistance, and management commitment, is significantly associated with positive attitudes towards technology among teacher-librarians.

Discussion of Findings

The study revealed that teacher-librarians at the College of Education, Akwanga demonstrated a positive attitude towards information technology (IT), with a grand mean of 3.65. This finding indicated that they generally perceived IT as useful and relevant to library operations, information retrieval, communication, and professional activities. The finding was consistent with Odelami et al. (2026), who reported that Nigerian librarians recognized the usefulness and ease of use of artificial intelligence technologies for knowledge-sharing activities. Similarly, Fasola et al. (2024) found considerable awareness, acceptance, and readiness among Nigerian librarians to adopt blockchain technology for library services. Akintunde and Amuda (2024) also reported that perceived usefulness was an important factor in technology adoption among academic libraries in Nigeria. The finding was consistent with the Technology Acceptance Model (TAM), which proposes that perceived usefulness and perceived ease of use influence users' attitudes towards technology (Davis, 1989). The positive attitude observed among the teacher-librarians suggested that they recognized the potential of IT to facilitate information retrieval, expand access to electronic resources, simplify library operations, and support professional activities.

The study further found that teacher-librarians utilized IT to a high extent, with a grand mean of 3.02. Internet resources, library automation systems, OPAC, and email or electronic communication tools were among the major technologies used for information provision. This finding agreed with Owate (2024), who reported that librarians in South-South Nigerian universities possessed knowledge of several digital applications, although utilization varied across applications. Similarly, Ambi et al. (2024/2025) reported the use of ICT for current-awareness services, selective dissemination of information, reference services, and internet-based services in Federal University libraries in North-West Nigeria. From the TAM perspective, the relatively high utilization could be associated with librarians' perceptions that these technologies were useful and sufficiently easy to use in performing routine information-service activities (Davis, 1989). However, the lower utilization of some electronic databases and digital repositories suggested that limited access, technical competence, connectivity, and institutional conditions could constrain comprehensive technology utilization. Enweani and Okafor (2024) similarly identified inadequate funding, power interruptions, poor internet connectivity, and limited computer literacy as challenges to IT use in Nigerian academic libraries.

The study also established a significant positive relationship between teacher-librarians' attitudes towards IT and effective information provision ($r = .71, p < .001$). This finding indicated that more favourable attitudes towards IT were associated with higher reported effectiveness in information provision. The finding was consistent with Bada et al. (2024), who reported a significant relationship between digital competence and information-service delivery among library personnel in selected Nigerian research institutes. TAM provides an appropriate explanation because librarians who perceive IT as useful and easy to use are more likely to develop favourable attitudes towards its application in professional activities (Davis, 1989). Thus, improving technology-supported information provision requires attention not only to ICT availability but also to librarians' perceptions, confidence, and technological competence. A stronger positive relationship was found between IT utilization and effective information provision ($r = .76, p < .001$), representing the strongest relationship among the variables examined. This finding was consistent with Ambi et al. (2024/2025) and Bada et al. (2024), whose studies associated ICT utilization and digital competence with information-service delivery. The finding also aligned with TAM because technologies perceived as useful and easy to use are more likely to be utilized in performing work-related tasks (Davis, 1989). The result suggested that greater utilization of available IT was associated with higher reported effectiveness in information provision. Therefore, ICT facilities need to be functional, accessible, relevant, and supported by appropriate training.

Finally, the study found a significant positive relationship between institutional support and teacher-librarians' attitudes towards IT ($r = .63, p < .001$). This finding suggested that higher institutional support was associated with more favourable attitudes towards IT. Institutional support includes infrastructure, training opportunities, technical assistance, maintenance, funding, and supportive administrative arrangements. Ogunmola and Adeyeye (2024) reported that facilitating conditions were important in library technology use among academic librarians in Abuja, while Adekoya and Inyang (2021) found that organizational conditions influenced the adoption of Web 2.0 technologies among academic librarians in Akwa Ibom State. Overall, the findings indicate that effective technology-supported information provision requires not only ICT facilities but also sustained professional development, reliable infrastructure, technical support, maintenance, and supportive institutional policies.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Sustaining positive attitude towards IT: The College Librarian should sustain teacher-librarians' positive attitudes towards IT by organizing at least two professional development and technology-awareness programmes each academic session, focusing on emerging library technologies, their practical benefits, and successful applications in information services.
2. Increasing IT utilization: The Provost of the College of Education, Akwanga, in collaboration with the College Librarian, should provide and upgrade ICT facilities, particularly electronic databases, digital repositories, reliable internet connectivity, library automation systems, and social-media platforms, and ensure that each teacher-librarian receives at least one hands-on training session per semester on the effective use of these technologies for information provision.
3. Improving IT utilization for effective information provision: The Provost, with support from TETFund where applicable, should ensure that library ICT facilities are functional and accessible by providing reliable internet connectivity, uninterrupted power

alternatives, routine equipment maintenance, and technical support, with ICT equipment and network systems inspected at least once every quarter to minimize service interruptions.

References

- Abdullahi, A., Amao, M. A., & Ibrahim, M. M. (2024). Information communication technology competencies of academic librarians in information services delivery in higher institutions' libraries in Bauchi State, Nigeria. *Journal of Educational Research and Practice*, 5(8).
- Adekoya, C. O., & Inyang, E. O. (2023). Academic library leadership in Nigeria and ICT adoption. *The International Information & Library Review*, 55(3), 220–232.
- Akintunde, M. O., & Amuda, H. O. (2024). Predictors of adoption of blockchain technology by academic libraries in Nigeria. *Library Hi Tech*. <https://doi.org/10.1108/LHT-06-2023-0247>
- Amadi, E. C. R. (2023). Knowledge of various types of online information resources and utilization by librarians for effective services delivery in public university libraries in South-East, Nigeria. *Lagos Journal of Library and Information Science*, 11(1–2), 200–215.
- Ambi, M. A. W., Dawha, E. M., & Aliyu, A. (2024/2025). Correlation between information and communication technology use and service delivery by library staff in Federal University libraries in Northwest, Nigeria. *University of Ibadan Journal of Library and Information Science*.
- Bada, B. A., Oga, G. A., & Daramola, O. M. (2024). Digital competence and information service delivery by library personnel in selected research institutes in Oyo and Lagos State, Nigeria. *Journal of Applied Information Science and Technology*, 17(2).
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approach* (6th ed.). SAGE Publications.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Enweani, U. V., & Okafor, N. G. (2024). Information technology usage and problems in academic libraries in Anambra State. *Academic Research Journal on Health Information Management*, 5(2), 62–70. <https://doi.org/10.14662/arjhim2024600>
- Fasola, O. S., Oyadeyi, A. E., & Iyoro, A. O. (2024). Awareness, acceptance and readiness to use blockchain technology for library services in academic libraries in Nigeria. *Communicate: Journal of Library and Information Science*, 26(1), 270–288.
- International Federation of Library Associations and Institutions. (2024). *IFLA ARL update on the library worker*.
- International Federation of Library Associations and Institutions. (2025). *Empowering library workers in the digital age: Revised IFLA CPD guidelines*.
- Odelami, B. J., Ebhonu, S. I., Oradugba, F. L., Usman, A. I., et al. (2026). Librarians' propensity to use AI technologies for knowledge sharing in Nigeria based on technology acceptance model. *Journal of Information Science*. <https://doi.org/10.1177/09557490251414717>
- Odunlade, R. O., & Ojo, J. O. (2023). Digital transformation and service delivery in academic libraries: A post COVID-19 approach. *Lokoja Journal of Information Science Research*, 1(1), 41–60.
- Ogunmola, V. D., & Adeyeye, S. V. (2024). Facilitating conditions as predictor for the use of library technology by academic librarians in the Federal Capital Territory, Abuja. *Lead*

- City International Journal of Library, Information & Communication Sciences*, 1(2), 372–386.
- Okorigbo, L. O., & Kanu, C. A. (2022). The emerging role of librarians in the management of digitised academic libraries in Nigeria. *Lagos Journal of Library and Information Science*, 11(1–2), 95–112.
- Owate, C. N. (2024). Knowledge and utilization of digital applications for effective service delivery in academic libraries in South-South universities, Nigeria. *International Journal of Intelligent Information Systems*, 13(3), 43–52.
<https://doi.org/10.11648/j.ijis.20241303.11>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Shikali, M., Muneja, P., & Kassim, M. (2024). Access to library information resources by university students during COVID-19 pandemic in Africa: A systematic literature review. *COVID Research: Open Access*, 2(3), 1–8.
- Tella, A., & Dunmade, A. O. (2025). Application of ICT in Nigerian libraries: The need to look toward 4IR technologies from the perspective of diffusion of innovation theory. *Revista Brasileira de Biblioteconomia e Documentação*.
- UNESCO. (2023). *Global education monitoring report 2023: Technology in education—A tool on whose terms?* UNESCO. <https://doi.org/10.54676/UZQV8501>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.