



LIBRARIANS' KNOWLEDGE AND USE OF LIBRARY MANAGEMENT SOFTWARE FOR INFORMATION SERVICE DELIVERY IN FEDERAL COLLEGES OF EDUCATION IN NORTH-WEST NIGERIA

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Abstract

Library Management Software (LMS) has become an essential technological tool for automating library operations and enhancing information service delivery in academic libraries. Effective utilization of LMS depends largely on librarians' knowledge of its functionalities and their ability to apply such knowledge in managing library services. This study explored librarians' knowledge and use of library management software for information service delivery in federal colleges of education in north-west Nigeria. The study was guided by the Technology Acceptance Model (TAM) and adopted a qualitative multiple case study design. Twelve librarians from Federal College of Education, Kano (Now upgraded to Yusuf Maitama Sule Federal University of Education, Kano), Federal College of Education, Zaria (Now upgraded to Federal College of Education, Zaria), and Federal College of Education (Technical), Bichi were purposively selected. Data were collected through semi-structured interviews and analyzed thematically using NVivo software. The findings revealed that librarians possessed varying levels of knowledge regarding LMS concepts, functionalities, and modules. Participants demonstrated familiarity with major LMS modules such as cataloguing, circulation, acquisitions, serials management, reporting, and Online Public Access Catalogue (OPAC). The study further revealed that LMS was utilized primarily for cataloguing, circulation, information retrieval, user management, and report generation, although the extent of utilization varied across the institutions. Librarians in Zaria reported relatively broader utilization of LMS functionalities compared to their counterparts in Kano and Bichi. Participants attributed their knowledge and utilization of LMS to formal education, workshops, seminars, peer learning, and practical work experience. The study concludes that librarians' knowledge significantly influences the utilization of LMS for information service delivery. The findings support the assumptions of the Technology Acceptance Model that users are more likely to utilize technologies they understand and perceive as useful. The study recommends continuous professional training and stronger institutional support to enhance librarians' knowledge and utilization of LMS in Colleges of Education.

Keywords: Library Management Software, Knowledge, Utilization, Information Service Delivery, Technology Acceptance Model (TAM).



Introduction

The increasing application of Information and Communication Technology (ICT) has transformed the operations and services of academic libraries worldwide. One of the major technological innovations adopted by libraries is Library Management Software (LMS), which facilitates the automation of core library functions and improves the efficiency of information service delivery. Library Management Software refers to an integrated computerized system designed to manage library operations such as cataloguing, circulation, acquisitions, serials management, Online Public Access Catalogue (OPAC), report generation, and user management (Johnson, 2020; Yang & Li, 2021). Through these functionalities, LMS enhances access to information resources, improves service quality, and supports effective management of library collections.

The successful implementation of Library Management Software depends largely on librarians' knowledge of its concepts, functionalities, and operational procedures. Knowledge of LMS refers to librarians' understanding of the software, its modules, features, applications, and role in supporting information service delivery. Librarians are expected to possess adequate knowledge of library management software to effectively manage digital library operations and respond to the changing information needs of users. Previous studies have shown that librarians with sufficient knowledge are more likely to utilize available technologies effectively and contribute to improved service delivery (Owate, 2024; Muhammad & Musa, 2025).

Beyond knowledge, the utilization of Library Management Software remains a critical factor in determining the effectiveness of library management software. Utilization refers to the actual application of LMS functionalities and modules in performing library operations and delivering services to users. Effective utilization involves the use of modules such as cataloguing, circulation, acquisitions, serials control, OPAC, report generation, and user management for efficient library service delivery. Although many academic libraries have adopted LMS, studies indicated that the level of utilization of available software functionalities varies across institutions, with some libraries utilizing only a limited number of modules (Adebayo & Ahmed, 2023; Ahmed & Tsagem, 2024).

The relationship between knowledge and utilization is particularly important in understanding technology adoption in libraries. Librarians who possess adequate knowledge of LMS are more likely to appreciate its usefulness, develop confidence in its operation, and utilize its functionalities effectively. This relationship is explained by the Technology Acceptance Model (TAM), which posits that users' acceptance and utilization of technology are influenced by their perceptions of usefulness and ease of use (Davis, 1989). In the context of this study, librarians' knowledge of LMS may shape these perceptions and consequently influence the extent to which the software is utilized for information service delivery.

In Nigeria, considerable efforts have been made to automate academic libraries through the adoption of systems such as Koha, NewGenLib, Evergreen, and other integrated library management platforms. Despite these developments, evidence suggests that the knowledge and utilization of LMS among librarians remain uneven across institutions due to differences in training opportunities, technical competence, infrastructural support, and institutional commitment to automation (Adigun *et al.*, 2024; Zubairu & Musa, 2023). Federal Colleges of Education occupy a strategic position in teacher education and knowledge development; therefore, understanding librarians' knowledge and utilization of LMS in these institutions is essential for improving information service delivery and supporting academic activities.



Therefore, the study explored perceived knowledge of librarians on the use of library management software for information service delivery in federal colleges of education in north-west Nigeria.

Statement of the Problem

Ideally, librarians are expected to possess adequate knowledge of Library Management Software concepts, functionalities, and operational procedures and effectively utilize the software to facilitate timely access to information resources, improve service delivery, and support library users' information needs. Effective utilization of Library Management Software (LMS) is therefore dependent on librarians' knowledge, skills, and willingness to integrate the software into routine library operations.

Despite the increasing adoption of LMS in Nigerian academic libraries, studies have shown that many librarians do not fully utilize the available functionalities of these systems for effective information service delivery (Adebayo & Ahmed, 2023; Adegboire, 2018). Previous studies have attributed this situation to inadequate knowledge, limited training opportunities, and insufficient exposure to library automation technologies (Owate, 2024; Muhammad & Musa, 2025). Although several studies have investigated LMS adoption and utilization in universities and other tertiary institutions, there is limited empirical evidence regarding librarians' knowledge and utilization of LMS in Federal Colleges of Education, particularly in North-West Nigeria. This knowledge gap necessitated the present study, which explored librarians' knowledge and use of Library Management Software for information service delivery in federal colleges of education in north-west Nigeria.

Research Objectives

The study was guided by the following research objectives:

1. Explore librarians' knowledge on Library Management Software for information service delivery in Federal Colleges of Education in North-West Nigeria.
2. Describe how librarians utilize Library Management Software for information service delivery in Federal Colleges of Education in North-West Nigeria.

Significance of the Study

The study is significant to librarians, library management, Federal Colleges of Education, policymakers, professional library associations, and researchers in Library and Information Science. The study is significant because it provides useful insights into librarians' knowledge and utilization of Library Management Software (LMS). It can help librarians improve their skills through continuous training and practical experience, assist library management in identifying needs for technical support, ICT infrastructure, funding, and professional development, and support Federal Colleges of Education in developing effective LMS capacity-building strategies. The findings may also guide policymakers and professional library associations in strengthening librarians' technological competencies and contribute to existing knowledge by providing evidence on LMS use in Federal Colleges of Education in North-West Nigeria.



Literature Review

Library Management Software (LMS) is an integrated computerized system designed to automate and manage library operations and services. It combines various library functions, including cataloguing, circulation, acquisitions, serials management, Online Public Access Catalogue (OPAC), report generation, and user management into a single platform (IGI Global, 2021; Johnson, 2020). The emergence of LMS has transformed academic libraries by improving operational efficiency, reducing manual processes, enhancing access to information resources, and supporting effective information service delivery. According to Yang and Li (2021), modern LMS platforms provide libraries with the technological capability to manage collections efficiently while facilitating timely access to information by users. Consequently, the adoption of LMS has become an important component of library automation and digital transformation initiatives in academic libraries worldwide.

The effectiveness of Library Management Software depends largely on librarians' knowledge of its concepts, functionalities, and applications. Knowledge of LMS refers to librarians' understanding of the software, its operational modules, features, and role in supporting library services. Librarians are expected to possess adequate knowledge of LMS in order to perform automated library operations effectively and maximize the benefits of library automation. Previous studies have shown that librarians with higher levels of knowledge regarding automation technologies tend to utilize library systems more effectively than those with limited knowledge (Mallipudi *et al.*, 2018). Similarly, Owate (2024) reported that technological knowledge and digital literacy significantly influence librarians' ability to utilize digital applications for effective service delivery. In the Nigerian context, Muhammad and Musa (2025) found that librarians' knowledge of LMS contributes positively to efficient information service delivery and effective management of library resources.

Utilization of LMS refers to the actual application of software functionalities and modules in performing library operations and delivering services to users. Effective utilization involves the use of modules such as cataloguing, circulation, acquisitions, serials management, OPAC services, report generation, and user administration. The extent of LMS utilization often determines the level of success achieved through library automation. Studies have indicated that although many academic libraries have adopted LMS, the utilization of available functionalities varies considerably across institutions (Adebayo & Ahmed, 2023; Ahmed & Tsagem, 2024). Some libraries utilize the software extensively for multiple operations, while others restrict its use to basic cataloguing and classification activities. Factors such as training opportunities, technical competence, institutional support, and infrastructure have been identified as important determinants of LMS utilization (Adigun *et al.*, 2024; Zubairu & Musa, 2023).

This study was guided by the Technology Acceptance Model (TAM) developed by Davis (1989). TAM posits that users' acceptance and utilization of technology are influenced by two major factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that a technology will improve job performance, while perceived ease of use refers to the degree to which the technology is considered easy to learn and operate. In the context of this study, librarians' knowledge of LMS may influence their perception of the software's usefulness and ease of use, thereby affecting the extent to which they utilize the system for information service delivery. The model therefore provides



a useful framework for understanding the relationship between librarians' knowledge and utilization of Library Management Software in academic libraries.

Although previous studies have examined library automation, digital library technologies, and the adoption of Library Management Software in academic libraries, limited qualitative evidence exists regarding librarians' knowledge and utilization of LMS in Federal Colleges of Education, particularly within North-West Nigeria. This study therefore contributes to the existing body of knowledge by providing in-depth insights into librarians' experiences, perceptions, and utilization practices relating to Library Management Software for information service delivery.

Methodology

This study adopted a qualitative multiple case study design to explore perceived knowledge of librarians on the use of library management software for information service delivery in federal colleges of education in north-west Nigeria. The multiple case study approach was considered appropriate because it enabled an in-depth exploration of librarians' experiences and perceptions across different institutional contexts. The study was conducted in three Federal Colleges of Education that had implemented Library Management Software, namely Federal College of Education, Kano (now upgraded to Yusuf Maitama Sule Federal University of Education, Kano), Federal College of Education, Zaria (now upgraded to Federal University of Education, Zaria) and Federal College of Education (Technical), Bichi. Twelve librarians who were directly involved in the use of library management software for information service delivery were purposively selected. Data were collected through semi-structured interviews, which provided participants with the opportunity to share their experiences and perspectives regarding LMS knowledge and utilization. The interview data were transcribed, coded, and analyzed thematically using NVivo software. Themes were generated based on recurring patterns and meanings emerging from participants' responses. In addition to within-case analysis, cross-case analysis was conducted to identify similarities and differences in librarians' knowledge and utilization of LMS across the three institutions. To ensure credibility and trustworthiness, participants' responses were verified during the interview process, and verbatim quotations were used to support the findings.

Table 1. Population of the study

S/n	Name of Federal Colleges of Education	Population of the Study
1	Federal College of Education, Kano (now upgraded to Yusuf Maitama Sule Federal University of Education, Kano)	3
2	Federal College of Education, Zaria (now upgraded to Federal University of Education, Zaria)	6
3	Federal College of Education, Bichi	3
	Total	12

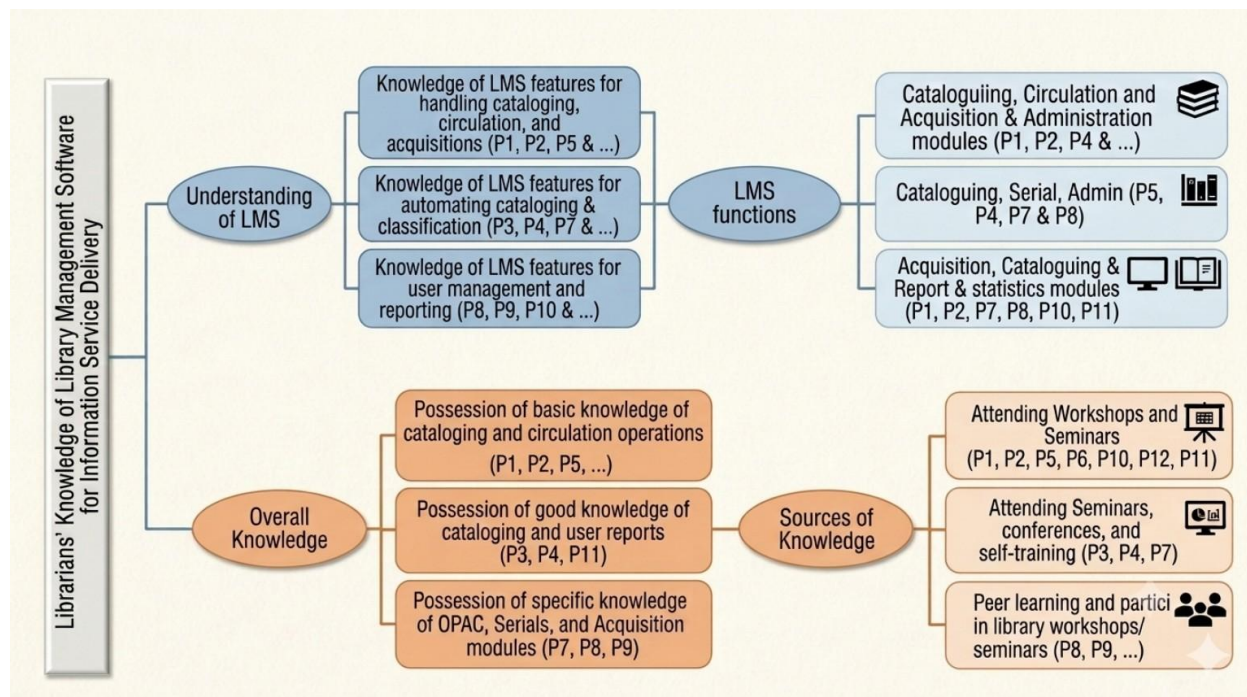
(Source: Researcher's Field Survey, 2025)

Findings

The analysis of interview data revealed two major themes relating to librarians' knowledge and utilization of Library Management Software (LMS) for information service delivery in



Federal Colleges of Education in North-West Nigeria. The themes emerged from participants' experiences and perceptions across the three institutions and are presented below.



Source: Field data, 2026.

Theme 1: Librarians' Knowledge of Library Management Software for Information service delivery

The findings revealed that librarians across the three institutions possessed varying levels of knowledge regarding Library Management Software. Participants demonstrated understanding of LMS concepts, functionalities, modules, and applications in library operations. Most participants described LMS as an integrated software package used to automate and manage library activities such as cataloguing, circulation, acquisitions, serials control, Online Public Access Catalogue (OPAC), and report generation. A participant from Federal College of Education, Zaria explained: *"Library Management Software is a system that automates library operations and helps us manage cataloguing, circulation, acquisitions and other services more efficiently."* (P4) Similarly, a participant from Kano stated: *"The software helps us organize information resources and makes it easier to retrieve and manage records electronically."* (P2). The responses suggest that participants understood LMS as a technological tool for improving efficiency and service delivery.

The findings also revealed that participants generally described their knowledge level as basic or moderate. One participant stated: *"My knowledge regarding LMS can be described as basic."* (P1). Another participant similarly explained: *"I have basic knowledge of the software and its operations."* (P2). Participants from Zaria expressed greater confidence regarding their knowledge of LMS. One participant explained: *"My knowledge of LMS is very good."* (P4). Another participant remarked: *"I have acquired enough practical knowledge because we use the software regularly."* (P7). Participants described their knowledge mainly in terms of operational activities. One participant stated: *"My knowledge*



can be described based on basic operations such as cataloguing and circulation." (P10). Another participant remarked: *"I have moderate knowledge that allows me to perform routine activities."* (P11). However, Participants from Zaria generally demonstrated broader knowledge of software functionalities and modules, while participants from Kano and Bichi mostly reported moderate knowledge acquired through practical experience and routine use of the software.

The findings further revealed that participants were familiar with major LMS modules, particularly cataloguing, circulation, OPAC, acquisitions, serials management, and report generation. One participant explained: *"I am familiar with cataloguing, circulation, OPAC, serials, acquisitions, reports and user management."* (P1). Another participant also stated: *"I am familiar with cataloguing, circulation, OPAC, serials, acquisitions, reports and user management."* (P5) Another participant explained: *"OPAC and circulation modules are among the modules we use frequently."* (P6). The findings suggested broader familiarity of LMS modules among participants despite differences in actual utilization.

Regarding sources of knowledge acquisition, participants identified formal education, professional workshops, seminars, peer learning, self-learning, and practical work experience as important avenues through which they acquired LMS knowledge. One participant remarked: *"Most of what I know about Koha came through workshops and practical experience in the library."* (P7). Another participant noted: *"I acquired my LMS knowledge through seminars and workshops."* (P1). Another participant explained: *"My knowledge came through self-learning, peer learning, and workshops."* (P3). Another participant stated: *"Seminars and workshops contributed significantly to my knowledge."* (P6). The findings indicate reliance on both formal and informal learning opportunities.

Theme 2: Utilization of Library Management Software for Information Service Delivery

The findings revealed that librarians utilized Library Management Software for various library operations and information service delivery activities. The extent of utilization, however, varied across the three institutions. Participants reported using LMS primarily for cataloguing, circulation, Online Public Access Catalogue (OPAC) services, acquisitions, report generation, and user management. Cataloguing emerged as the most widely utilized LMS function across the three institutions. Participants explained that the software had significantly improved the organization, storage, and retrieval of bibliographic records. A participant from Zaria stated: *"We use the software regularly for cataloguing library materials. It has made record creation and retrieval much easier than the manual system."* (P5). Similarly, a participant from Kano noted: *"Most of our cataloguing activities are carried out through the software because it saves time and improves accuracy."* (P1).

The findings further revealed that librarians utilized LMS for circulation activities, including charging, discharging, renewal of borrowed materials, and monitoring users' borrowing records. Participants acknowledged that the circulation module improved efficiency and accountability in managing library transactions. According to one participant: *"The circulation module enables us to track borrowed materials and manage users' records effectively."* (P8). Online Public Access Catalogue (OPAC) services also emerged as an important area of LMS utilization. Participants reported that OPAC facilitates information



retrieval by enabling users to search library collections electronically. A participant observed: *"Students can search for materials through OPAC without depending entirely on library staff."* (P11)

The findings additionally showed that LMS was utilized for acquisitions, serials management, report generation, and user administration, although these functionalities were not uniformly used across all institutions. Participants from Zaria reported broader utilization of multiple modules compared to participants from Kano and Bichi, where software utilization was concentrated mainly on cataloguing and circulation functions. One participant from Bichi remarked: *"We use some modules effectively, especially cataloguing and circulation, but there are other modules that are not fully operational."* (P9)

Overall, the findings suggest that librarians actively utilize Library Management Software for information service delivery; however, the level of utilization differs across institutions depending on available infrastructure, technical support, staff competence, and institutional commitment to library automation.

Cross-Case Analysis of Knowledge and Utilization of LMS

Cross-case analysis revealed similarities and differences in librarians' knowledge and utilization of Library Management Software across the three institutions. Librarians in all the institutions demonstrated awareness of LMS concepts and reported utilizing the software for key library operations. However, participants from Federal College of Education, Zaria demonstrated relatively broader knowledge of LMS functionalities and reported more extensive utilization of software modules. This was attributed to longer implementation experience, greater exposure to training opportunities, and stronger institutional support.

Differences emerged regarding the sources of knowledge competence acquisition. Participants from Zaria also demonstrated relatively stronger practical exposure and confidence in LMS usage, largely due to formal training opportunities and longer implementation experience. In contrast, participants from Kano and Bichi reported basic or average knowledge levels and relied mainly on self-learning, peer learning, and workshops.

Participants from Kano exhibited moderate knowledge and utilization levels, with software usage concentrated mainly on cataloguing, circulation, and OPAC services. Similarly, participants from Bichi demonstrated foundational knowledge of LMS and utilized selected modules but reported limitations in the utilization of advanced functionalities. Despite these differences, participants across the three institutions acknowledged the importance of LMS in improving efficiency, enhancing information access, and supporting effective information service delivery.

The findings therefore indicate that librarians' knowledge and utilization of LMS are interconnected and may be influenced by training opportunities, practical experience, technical competence, and institutional support.



Discussion of Findings

The study explored librarians' knowledge and use of Library Management Software for information service delivery in federal colleges of education in north-west Nigeria. The findings revealed that librarians generally possessed adequate knowledge of LMS concepts, functionalities, and operational modules. Participants demonstrated understanding of LMS as an integrated software system used to automate library operations such as cataloguing, circulation, acquisitions, serials management, report generation, and Online Public Access Catalogue (OPAC) services. This finding is consistent with Johnson (2020) and Yang and Li (2021), who described LMS as a comprehensive platform for managing and automating library functions. The finding further supports the work of Mallipudi et al. (2018), who reported that librarians' knowledge of automation technologies contributes significantly to effective management of library operations and services.

The study further revealed variations in librarians' levels of knowledge across the institutions studied. Participants from Federal College of Education, Zaria demonstrated relatively broader knowledge of LMS functionalities and applications compared to participants from Kano and Bichi. The differences observed may be associated with variations in training opportunities, practical exposure, and institutional support. This finding corroborates the study of Owate (2024), which found that librarians with higher levels of technological knowledge and digital literacy are more likely to utilize digital applications effectively for information service delivery. Similarly, Muhammad and Musa (2025) reported that adequate knowledge of LMS enhances librarians' ability to manage information resources and support library users effectively.

The findings also revealed that librarians utilized Library Management Software for various information service delivery activities, including cataloguing, circulation, OPAC services, acquisitions, report generation, and user management. Cataloguing and circulation emerged as the most frequently utilized modules across the three institutions. The utilization of these modules reflects the growing role of library automation in improving operational efficiency and service quality. This finding agrees with Adebayo and Ahmed (2023), who observed that the effective utilization of LMS enhances resource organization, information retrieval, and overall service delivery in academic libraries. The finding is also consistent with Ahmed and Tsagem (2024), who reported that libraries tend to derive greater benefits from automation when available software functionalities are actively utilized.

Cross-case analysis further revealed differences in the extent of LMS utilization across the institutions. Participants from Zaria reported broader utilization of software functionalities compared to their counterparts in Kano and Bichi. This suggests that librarians who possess greater knowledge and practical experience tend to utilize LMS more extensively. Participants' narratives indicated that training, workshops, peer learning, and practical exposure contributed significantly to both knowledge acquisition and software utilization. These findings support Adigun *et al.* (2024) and Zubairu and Musa (2023), who identified training opportunities and institutional support as important factors influencing librarians' utilization of library automation technologies.

The findings of this study can also be explained using the Technology Acceptance Model (TAM) developed by Davis (1989). TAM posits that technology utilization is influenced by



perceived usefulness and perceived ease of use. The findings suggest that librarians who possessed broader knowledge of LMS demonstrated greater confidence in operating the software and reported more extensive utilization of its functionalities. This implies that knowledge enhances librarians' perceptions of the usefulness and ease of use of LMS, thereby encouraging its utilization for information service delivery. The experiences shared by participants therefore support the assumptions of TAM that users are more likely to utilize technologies that they understand and perceive as beneficial to their work performance.

Therefore, generally the findings indicate that knowledge and utilization of Library Management Software are closely interconnected. Librarians who possess adequate knowledge of LMS functionalities are better positioned to utilize the software effectively for information service delivery. The study therefore highlights the importance of continuous professional development, practical training, and institutional support in strengthening librarians' capacity to maximize the benefits of library automation technologies.

Conclusion

This study explored librarians' knowledge and use of Library Management Software for information service delivery in federal colleges of education in north-west Nigeria. The findings revealed that librarians generally possess adequate knowledge of LMS concepts, functionalities, and operational modules, which enables them to utilize the software for various library operations, including cataloguing, circulation, OPAC services, acquisitions, and report generation. However, variations were observed across the institutions in both the level of knowledge and extent of utilization. The study further established that librarians' knowledge plays an important role in influencing the utilization of LMS, as participants with broader understanding and practical experience reported more extensive use of software functionalities. The findings support the assumptions of the Technology Acceptance Model that users are more likely to utilize technologies they perceive as useful and easy to use. The study therefore underscores the importance of continuous professional development and institutional support in enhancing librarians' capacity to utilize Library Management Software effectively for improved information service delivery.

Recommendations

1. Federal Colleges of Education should organize regular training programmes, workshops, and seminars to enhance librarians' knowledge of Library Management Software, its functionalities, and emerging trends in library automation, and also library management should encourage continuous professional development and practical hands-on experience to strengthen librarians' understanding and competence in the operation of Library Management Software.
2. Institutional management should provide adequate technical support, ICT infrastructure, and funding to facilitate the effective utilization of Library Management Software for information service delivery, and also librarians should be encouraged to maximize the utilization of available LMS modules, including cataloguing, circulation, acquisitions, serials management, report generation, and OPAC services, in order to improve the efficiency and quality of information service delivery.



References

- Adebayo, S. O., & Ahmed, H. M. (2023). Adoption of integrated library systems in Nigerian tertiary institutions: Determinants and implications for service delivery. *Library Philosophy and Practice*, 1–15.
- Adigun, F. A., Oladipo, T. O., & Lawal, R. B. (2024). Evaluating librarians' competencies and challenges in the use of library management systems in Nigerian colleges of education. *African Journal of Information and Knowledge Management*, 15(2), 33–48.
- Ahmed, A., & Tsagem, M. M. (2024). Library management software utilization and information service delivery in academic libraries in Nigeria. *Nigerian Journal of Library and Information Science*, 7(1), 45–59.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- IGI Global. (2021). *Library management system*. In *Dictionary of information science and technology*. IGI Global.
- Johnson, R. K. (2020). *Library management systems: A guide to selection and implementation*. American Library Association.
- Mallipudi, A. K., Naick, B. R. D., & Rao, K. S. (2018). Library professionals' knowledge and utilization of integrated library management software in engineering college libraries: A study. *Library Philosophy and Practice*, 1–18.
- Muhammad, A. M., & Musa, Y. S. (2025). Knowledge and use of library management systems for enhanced service delivery in Nigerian federal colleges of education. *Information Impact: Journal of Information and Knowledge Management*, 8(1), 27–40.
- 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>
- Yang, S. Q., & Li, Y. (2021). An investigation of library management systems: Features, functionalities, and trends. *Journal of Library and Information Science*, 46(2), 119–137.
- Zubairu, A. A., & Musa, S. I. (2023). Capacity building and utilization of library automation technologies in Nigerian academic libraries. *African Journal of Library, Archives and Information Science*, 33(2), 121–134.