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A Review of Literature on Koha Open Source Integrated Library Management System for Library Resources Management

By

Yahaya Aliyu Ismaila¹, Abdulsalam A. Salman², Abdul Hadi Ayodeji³, Oluwaseun Bamidele⁴ and Bello Ganiyat⁵

Kwara State University, Library

Abstract

Koha, an open-source integrated library system (ILS), has significantly transformed library management practices since its inception in New Zealand in 1999. This study aims to review and analyze the literature on Koha adoption in the management of information resources in the library for effective service delivery, and its global impact over the decade from. This paper seeks to provide a comprehensive evaluation of Koha's adoption, assessing its importance in modern library operations. The study review various literature from 2014- 2024 on aspects of Koha's adoption, implementation, and user experience dimensions. The study also examine how Koha has facilitated streamlined cataloging, circulation, acquisition, and serials management in libraries of different sizes and types worldwide. The review highlights the benefits of Koha, such as cost-effectiveness, flexibility, and community-driven development, which contribute to its growing popularity among academic, public, and special libraries. Furthermore, the study review published literature around the globe for clear understanding of the adoption of koha integrated library management system in the library operations.

Keywords: Koha, Library management System, Open Source, Library Resources, Automation

Introduction

Libraries require modern technology to operate effectively and efficiently amidst the challenges of information overload and diverse media formats, while also catering to a growing user base. The integration of library software into service operations has led to the emergence of library automation and electronic services, including systems like Koha, Dspace, database subscriptions, e-collections, open educational resources, open access collections, and institutional repositories, all aimed at enhancing service delivery to patrons Sukanta and Sagram (2021) emphasized the various modules and functionalities that Koha offers to meet the diverse needs of libraries. Koha includes essential modules such as cataloguing, circulation, acquisitions, serials, administration, reporting, tools, and an online public access catalogue

(OPAC). These modules empower libraries to perform critical tasks, such as creating and managing bibliographic records, automating circulation processes, overseeing acquisitions and orders, and providing easy access to the library's collection for users.

As an open-source system, Koha enables libraries to customize and adapt the software to suit their specific needs. Libraries can configure workflows, adjust cataloguing rules, and personalize the user interface to better align with their unique requirements and preferences. Koha also offers an intuitive and user-friendly interface for both library staff and patrons, allowing users to navigate the system and perform tasks efficiently navigate the system, complete tasks, and access pertinent information, while library

patrons can effortlessly search for materials, place holds, and manage their accounts through the OPAC. Koha enhances library operations and boosts efficiency by automating various processes. Functions such as cataloguing, circulation, and acquisitions can be streamlined, minimizing manual labor and saving valuable time for library professionals.

Koha also supports interoperability with other systems and standards, facilitating seamless integration with third-party services and technologies. It can connect with external databases, discovery systems, and other library software, thereby enhancing its overall functionality and resource-sharing capabilities. The system benefits from a dynamic and engaged community of developers, library professionals, and users who contribute to its continuous development, support, and enhancement. Libraries utilizing Koha can leverage this community for assistance, collaboration, and the exchange of best practices. As an open-source solution, Koha removes the need for costly proprietary licenses, allowing libraries to take advantage of its features and benefits without incurring significant expenses, making it a cost-effective option for libraries of all sizes (Sukanta and Sagram, 2021).

Review of Published Literature 2014-2024

The period from 2014 to 2024 has witnessed remarkable progress in the automation of library resources, with the Koha Integrated Library Management System (ILMS) emerging as a

pivotal force in this evolution. This review seeks to deliver a thorough analysis of the existing literature regarding the use of Koha for automating library resources during this timeframe. By investigating a range of studies, reports, and articles, we will assess how Koha has been adopted across various library environments, its effects on library operations, user satisfaction, and overall efficiency. This review will also emphasize the development of Koha's features, the challenges encountered during its implementation, and the best practices that have surfaced. Through this examination, we aim to gain a deeper understanding of Koha ILMS's role in modernizing library services and its contributions to the field of library and information science.

In their study, Asad and Khan (2020) explored the factors influencing Pakistani librarians' intentions to adopt Koha, an open-source integrated library system. Their findings indicated that the librarians' willingness to use Koha was significantly affected by perceived usefulness and perceived ease of use.

The study conducted by Aderonke et al. (2021) surveyed the adoption and use of the Koha Library Integrated System in Nigeria. The research focused on 69 libraries that had implemented Koha as of September 2021. The findings indicated that Koha is predominantly utilized in libraries located in the South-West geopolitical zone of Nigeria and has been adopted by various types of libraries across the country.

Additionally, the study revealed that the primary reasons for adopting Koha ILS were its status as free software, its customizability to meet specific needs, its regular updates, and its ability to perform all essential library functions. In the study by Vimal Kumar (2019) titled "Data Migration from Legacy Systems to Koha," the University of Nebraska undertook the process of migrating data from its legacy system to Koha. While libraries are transitioning from proprietary software to free alternatives, the data migration process presents significant challenges. Issues such as vendor lock-in and improperly formatted data complicate the transition. Successful migration to the Koha Integrated Library System (ILS) necessitates improved teamwork and enhanced technical expertise.

According to Joel (2018), Koha software has emerged as a critical topic among academic libraries in Nigeria. The implementation of Koha is essential for achieving library automation goals. However, Koha cannot operate at its full potential without the necessary tools and accessories for effective application. The computerization of library processes is vital for librarians to perform their tasks efficiently and enhance services for library users. Librarians now recognize that the adoption of Koha is unavoidable in modern library settings. It is anticipated that findings from planners and policymakers will underscore the significance of Koha in library automation, enabling institutions like LAUTECH to offer scientifically-driven, need-based library and information services.

Consequently, libraries must increasingly function as information servers. To effectively address the challenges of the 21st century, it is imperative that Koha be fully integrated into library services without delay. Bhawan and Mahawar (2021) examined the adoption of the Koha Integrated Library Management System (ILMS) at the Indian Institute of Technology Bombay (IITB) and the Indian Institute of Technology Bhubaneswar (IITBBS). Their findings revealed that both institutions were previously using commercial software before transitioning to Koha. During the migration process, only IITBBS encountered data quality issues. Overall, both institutes received nearly all Koha modules positively, although they expressed satisfaction primarily with the acquisition module. The functionality of the serials module remained unclear to IITB. Nonetheless, the open-source nature, user-friendliness, accessible source code, and ease of use were compelling factors for implementing Koha, leading to an excellent overall experience with the system.

Similarly, Uzomba et al. (2021) investigated the adoption of library management software in selected university libraries in South Western Nigeria. Their study found that KOHA, VIRTUA, and SLAM were the three library software packages adopted, with a high level of usage reported. The research also highlighted challenges associated with these software packages, including inadequate funding, erratic

power supply, and the costs associated with procuring the necessary hardware and software.

Tella, Dina, Olaniyi, Memudu, and Oguntayo (2017) conducted a study to assess the use of Koha library software in selected university libraries in Kwara and Oyo States, Nigeria. The researchers focused on analyzing the perceptions and satisfaction levels of library professionals regarding Koha software in the selected libraries. The study also aimed to identify the factors influencing the use and non-use of Koha, as well as the challenges encountered during its installation. Results indicated that 90% of respondents had a positive perception of using Koha. However, the findings also highlighted significant challenges in adopting Koha, including power failures, poor management, a lack of in-house expertise, insufficient infrastructure, and inadequacies from vendors. In a related study by Ogbomo and Ogo (2020) on the selection criteria and usage of automation software among librarians in university libraries in South-South Nigeria, it was found that the automated services provided in these libraries primarily include cataloguing, circulation, and reference services. Librarians take into account factors such as cost, vendor credibility, system management, support and maintenance, software reliability, functionality, and user-friendliness when selecting automation software. The software packages currently in use in South-South Nigerian university libraries include KOHA, Strategic Library Automation Management, New Generation Library, and

Alexandria, although the extent of their usage remains low.

Jisna Jose (2017) noted that the adoption and utilization of open-source library management systems in libraries result in significant transformations in library functions and services. Koha, as an open-source library management software, is increasingly gaining global recognition. The findings indicated that many libraries in the study area faced challenges with data migration from other systems to Koha, particularly during the implementation phase. Some dedicated library professionals have developed techniques that, if included in the Koha Online Manual, could benefit future Koha libraries

Dizazuli, et.al (2022) Studied the challenges faced by the library in migrating the bibliographic record from the textual signpost definition to proper cataloguing MARC21 format using the open-source library management system, KOHA, are discussed in this case study. The study's findings highlighted the importance of introducing non-library professional workers to advanced library and information science, especially while switching from Winnebago Spectrum's textual signpost catalogue to Koha Integrated Library System's MARC21 bibliographic style. It is an experienced staff member of the German Malaysian Institute (GMI) Library without any training or experience in library science. Similarly, the study of Archana, Padmakumar & Beena (2014) catalogue

interfaces of integrated library management Systems (ILMS): experiences in a Proprietary and Open Source Software. The study found that the cataloging module of Koha is almost in par with that of proven proprietary software that has been in market for the past 25 years. Some suggestions made by this study may be incorporated for the further development and perfection of Koha. Azhar & Siddique (2024) investigated the challenges faced by library professionals regarding adoption and uses of Koha in Dr. Mahmud Husain library, Pakistan. The results of their study indicate that while most experts are happy with Koha's implementation, there are a few significant problems that need to be addressed right once in order to improve the system and services, including a lack of funding, modern technology, supervision, and maintenance costs.

Bwala and Akakandelwa (2021) explored the issues that libraries in Zambia's higher education institutions face when using Koha. The study's findings found that the main difficulty was librarians' inability to successfully use all of the Koha modules due to a lack of capabilities. The most commonly used modules are circulation and cataloging modules. Other issues noted were insufficient Internet access, a lack of technical help, and difficulty upgrading and backing up the Koha database.

Course reserve module online public access catalogue (OPAC) and web-scale library discovery services are interconnected to data

management and educational resource management systems in the library. Every divisions and units designed based on the user's requirements. This is in line with the research by Mandal (2021) designing course reserves using koha and vufind for library users. The whole integrated domain-specific interface is beneficial to the users because they could easily access the course reserve materials developed by different subject experts. As a consequence, both Koha and VuFind just provide capability of delivering the appropriate course module to the correct participants at the perfect time. The outcome of the research stand at the fact that all the modules in koha are useful for the library and the users. Similar to the research of Mnadal (2021) which same year with Karno (2021) research on the development of koha library management system: the UTM library experience. The study look into the capability of integral library management system Koha in supporting effective and systematic learning in line with the advent of future technology. The transition from commercial system to open source KOHA is seen as factors of technology transfer, cost reduction, source code enhancement, big data analysis, innovative culture and less dependency on vendors to strengthen the implementation. The study reveled that cost of technology in the implemetation of the koha software is the major problem facing the UTM library.

Kekartta & Mukhopadhyay(2023) Study the enhancement of OPAC through spatial data: stack-maps and text visualization in koha. This

study seeks to develop a system that enables users to locate books physically by integrating stack-maps functionalities with Koha OPAC. In addition, the study showcases how an open-source text analytics server can be incorporated inside an OPAC in Koha to generate various word-level visualizations by analyzing a text corpus, including the identification of spatial features such as place names. The research aims to contribute to the advancement of information retrieval and visualization techniques in library using OPACs experience. Inline with the submission of Kekartta & Mukhopadhyay (2023) is the work of Chuhan (2018) evaluate the use of koha library management software in OPJGU Library, India. Findings from the study, shows that OPJGU Library professionals have good perception towards koha and they also agreed with koha as free software with original source code. It is also found that OPJGU library has been equipped with good resources required to running library activities and services through koha library software. It is suggested that staff and user should be given proper orientation on benefits and outputs of koha.

Alikoba, Kiwelu, and Lwanga (2019) explored the factors that influence the acceptance and use of the Koha Integrated Library System (ILS) in Ugandan academic libraries. The study's findings reveal that nine factors influence Koha acceptance in Uganda's selected academic libraries. These include productivity, ease of use, Koha's free and open source nature, peer pressure, resource availability, subject expertise,

awareness, anxiety, and levels of computer literacy. Darko-Ampem (2017) investigates the adoption of Koha at Regent University College in Ghana: A case study of alternatives, opportunities, and obstacles. The research describes Regent University College (RUC)'s automation experience with the selection and implementation of the Koha library management system. The study's findings demonstrate that administering a library automation project in a developing country such as Ghana might be difficult. Challenges such as a shortage of local library vendors experienced in delivering automation solutions, recognized local competence in library automation, and the novelty of the Koha library system are substantial impediments.

Additionally, Walewangko (2022) research on implementation of school-based management at GMIM Koha Elementary School, focusing on the roles of principals, committees, and education commissions in improving education quality. The study reveals differences in understanding of School Based Management (SBM) among principals, committees, and commissions, and suggests training and modules to improve understanding. Solutions include improved communication, understanding roles, and a culture of cooperation. Also, Gupta et.al (2022) investigated the level of digital agricultural knowledge platform (IDEAL) in using koha for national agricultural research and education system in India libraries. The findings of their research found that the Agricultural research

libraries in India use Koha for their routine operations. The only area of deficiency is the acquisition module in Koha where many of the staff will require additional training for its full adoption.

Libraries around the world are using the technology in the best possible ways to satisfy their users through efficient and effective library services. The study of Khan, Zahid, & Rafiq (2016) discusses the process of KOHA implementation in Government College University (GCU) Libraries Lahore, while replacing the Library Management Software (LMS) implemented in 1999. The research extensively discussed the implementation of Koha in a narrative style. In the first phase, Koha was installed on a testing basis on one computer and its different modules were evaluated as per their functions in context of the requirements of GCU Libraries. The findings of the research as identified in Pakistani libraries, was that many librarians at large find it difficult to project in a developing country such as Ghana might be difficult. Challenges such as a shortage of local library vendors experienced in delivering automation solutions, recognized local competence in library automation, and the novelty of the Koha library system are substantial impediments.

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the technology modules in the software which as affected the implementation of the software.

Bhimrao (2020) Learn about the advantages of utilizing Koha's fully functional Integrated Library System (ILS), including the cost of the license, the flexibility to modify the product, and the ability to adapt, among other things. More than 300 libraries academic, public, school, and special libraries as well as those in Africa, Australia, Canada, the United States, France, India, and, of course, New Zealand use Koha, which organizes complicated classifications. Open source software has a lot of promise for libraries and includes an interface that makes it simple for users to start their own collections within libraries. Similarly, Uzonba, Oyebola, & Izuchukwu (2015) examined the use of open source integrated library system in academic libraries in Nigeria, with the aim of highlighting the capabilities and potentials of open source software (Koha) and its practical importance to academic libraries across the globe. Nineteen (19) universities (federal, state and private), four (4) polytechnics (federal and state) and two (2) colleges of education was examined and the findings of their research found that many libraries in Nigeria and across the globe have turned more and more to free and open source software. The major challenges confronting the libraries implementations include: inadequate funding, inadequate managerial support, inadequate power supply among others.

Educational institutions employ Koha, an effective and scalable library management

system. It continues to be the free and open-source library system pioneer in the world. Its growth is aided by libraries of all shapes and sizes as well as by organizations, partners, and sponsors worldwide. The study of Ali, Ahmed, & Noor (2021) evaluated Koha ILS as an effective open-source integrated library system application that public and private libraries are eager to use globally. Unfortunately, a number of Arab schools were unable to automate their school libraries for user-friendliness through the usage of the Koha ILS application. Several concerns that have been found in public and private schools can be resolved by implementing technology in library management. This increases effectiveness, convenience, and the functionality of library services. In the study of Nayem & Islam (2022) figure out the use of Koha in selected university libraries in Dhaka, Bangladesh. The findings of the research indicated that majority of the libraries in the study area were familiar with the use of Koha while just few libraries were having low usage of the software. According to Uzomba, Oyebola & Izuchukwu (2015) described integrated library management software, as a system designed to enhance all library routine activities as expected by the library users. A good and reliable ILS enhances management, control and easy access to information resources that are physical in a library and outside, for example, books, CD ROM, e-journal, e-books, e-databases, and repositories, among others. It also helps to reduce time wastage in the delivery of services to the

library users. The study of Ali (2023) examines the management of Integrated Library Management Software (ILMS) in private university libraries of northern Nigeria. The major objectives of the study were to identify the types of ILMS available in the private universities under study, management procedure of ILMS in the private university under study and the challenges associated with use of ILMS in private universities in North, Nigeria. The study revealed that, various types of ILMS were deployed and maintained by the University libraries studied, such as, Koha, Newgenlib, Dspace among others. The study also revealed the procedures used in managing the ILMS such as policies guiding the management and used of ILMS developed by the libraries, training, support, and maintenance of the software by the libraries and providers of the software to the libraries studied and identified some challenges such as poor technical support.

The use of computers in library operations gave birth to library automation and electronic library services such as database subscriptions, e-books and e-journal collections, open educational resources, open access collections, institutional repositories among others. This was inline with the study of Anyira (2020) on the need for adoption of koha integrated library management software in Nigerian academic libraries. The main objective of the research is to justify the need for

Nigerian libraries which have not automated their functions to adopt of Koha ILMS as their automation software and as well examine the need for the adoption. The study revealed that lack of skilled man power as factor affecting data migration to the adoption of koha in the study libraries. Also, the study of Mama(2016). Primarily described the adoption of the Koha integrated library system in a state university library. The study reveled that adoption of the koha software is not easy because some of the library employees are not willing to use it, some still preferred the traditional practice, others are not convinced of the benefits they can get from the software, and others do not have the necessary skills and knowledge on how to use and operate the computers that run the software and at the same time is used to access the software.

Conclusion

The development and impact of Koha, an open-source Integrated Library System (ILS), on library resources has significantly altered how libraries provide their services. The investigation examined material published between 2014 and 2024. By showcasing attributes like customization, free usage, and practicality for managing library services, it highlights how well-liked Koha is in libraries all throughout the world. Furthermore, Koha integrated library software is a well-researched topic worldwide and is no longer a novel trend in librarianship

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