



**Adoption of Koha Open Source Software for Service Delivery in  
Skyline University Library, Nigeria**

**By**

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**Abstract**

*This research investigated the adoption of Koha open source software for service delivery in Skyline University Library, Nigeria. The objectives of the study was to find out the: types of library services provided in the library studied; perception of library staff about the adoption of Koha in the library; attitude of library staff towards the adoption of Koha and; challenges associated with the adoption of Koha. Qualitative methodology was employed for the study using narrative based design. The population of the study comprised the six (6) library staff that work in the library. Interview was used to obtain data from all the six library staff in the library. Narrative analysis was use to analyze the data collected from the participants. Findings revealed that the: services provided in the library include technical and readers' in both physical and online forms; the library staff had a positive perception about the adoption of Koha. In terms of perceived usefulness, they agreed that Koha has enhanced their work performance and experience, improved their efficiency and productivity and positively impacted on the library's relevance. On perceived ease of use they agreed that Koha is easy to use because of its flexibility and adaptability. Findings also revealed that the library staff had a positive attitude and sentiment towards Koha because it is open source, requires no subscription, can be modified to meet the library's specific needs, and provides community and multilingual support and cost effective. The participants agreed that poor internet connectivity and epileptic power supply are the challenges affecting the adoption of Koha. The paper concluded by recommending that adequate internet and power infrastructure be provided for the library to function optimally.*

**Keywords:** KOHA, Open Source Software, Skyline University Library

## **Introduction**

Libraries provide services to their patrons through the use of Integrated Library Systems which can be subscription-based or open. An Open Source Software is any computer programme that allows publicly, free access and modifiable source code with different licensing permission support. Open software enables the management of both physical and electronic information resources and services in libraries by enhancing the selection, evaluation, acquisition, organization, subscription, maintenance, renewal and provision of access to resources based on users' need. Digital library services have become the most favorable to users of the library. Hence, libraries adopt various automated systems in order to meet the demands of the digital era. The main focus of Skyline University Library is to get the right information at the right time to the right users and in the right format. This is achieved by providing access to a variety of information that supports multimedia content; provide accessible networked resources and user-friendly interface. Link representations to local/external objects (hypertext) are also enabled to support advanced search and retrieval and advanced dissemination of electronic information resources through subscription, organization, access and preservation. Skyline University Library uses the Koha ILS to achieve service delivery to users of the library.

Koha is open source library software that enables increased staff efficiency, eliminates repetition, improve accuracy, save time and provide relevancy. Koha helps to ensure that library service is provided, through comprehensive and exhaustive assemblage of information on various subject areas Aderonke et al (2022). In contemporary times, the image of any library is increasingly measured by the services it offers in terms of helping clients to access universal information rather than its individual collection Khan and Sheik (2022). In other words, libraries world-wide need access to a wide range of information resources through sharing networks to meet the needs of their patrons. The use of ILS like Koha helps to achieve efficient automation of libraries. This study investigated the adoption of Koha open source software for service delivery in Skyline university library, Nigeria.

## **Problem Statement**

The growth of Open Source Software (OSS) is no doubt more visible in the 21st Century. Many libraries now make use of some of the available OSS to render more effective services to their users. However, libraries do not just select any OSS without putting into consideration the needs of their

users. One of the prominent OSS is Koha and many libraries in Nigeria have adopted it in managing their resources and services. Skyline University of Nigeria is one of the leading private universities in the country that adopted Koha Integrated Library System (ILS). This research was conducted to investigate the adoption of Koha for service delivery in Skyline university of Nigeria, particularly, with regards to the perception and attitude of library staff and challenges associated with its adoption.

### **Objectives of the Study**

1. To find out the types of services provided using Koha in Skyline University Library, Nigeria.
2. To find out the perception of library staff about the adoption of Koha open source software in the library understudied.
3. To find out the attitude of library staff towards the adoption of Koha open source software in the library understudied.
4. To find out the challenges associated with the adoption of Koha open source software in the library understudied

### **Review of Related Literature**

#### **Adoption of Koha in Libraries**

Many libraries world over have adopted Koha open source ILS for automating their services, including academic, public, special and school libraries. Sheeja (2009) conducted a study on adoption of Koha ILS in libraries around the world and found that 40% of academic libraries, 27% of special libraries, 21% of public libraries and 12 from other types of libraries had adopted Koha. Further analysis of the results indicated that 67 libraries had adopted and used Koha from North America, 47 from Asia, 46 from Europe and 26 from Oceania (Australia and New Zealand), 15 from Africa and 11 from South America. The number would have increased by now, since the study was conducted over a decade ago. Archana, Padmakumar and Beena (2014) reported that Cochin University of Science and Technology started automation with Adlib, a proprietary software in 2000 but migrated to Koha in 2010 because of the huge amount for purchasing the latest version of Adlib. This made Cochin University of Science the first university in Kerala State to implement Koha ILS.

In Nigeria, Koha was first installed and used by Bowen University Library and all the Koha modules were fully utilized since 2007 (Otunla and Akanmu-Adeyemo, 2010). Koha users in Nigeria have grown over the years since its first installation; for instance, Hudron and Emmanuel (2014) findings showed that 24 of university libraries in Nigeria use Koha. Ojo and Otunla (2018) studied the automation effort in universities libraries in the South-West, Nigeria. A total enumeration of 39 university libraries was used in the study. The result shows that 24 out of 39 university libraries in the South-West, Nigeria had been automated. Out of 24 automated libraries 13 were using open source khan and sheik (2022). Out of the 13 libraries 12 were using Koha. Furthermore, 4 out of the libraries using Koha migrated from proprietary library software because of high cost of maintaining proprietary software. The authors recommended adoption of open source that is free compared to proprietary library software. Otunla (2016) found that five of the seven libraries that implemented automation process in Osun state, Nigeria, adopted Koha.

Many studies have reported that not all Koha modules are been used in many libraries. For example Omopupa, Adedreji, and Sulyman-Haroon (2019) found that cataloguing and OPAC module is at a high level of use in the University of Ilorin Library, while serials, circulation and acquisitions modules are at low levels. Amando et al (2018) stated that the University of Jos Library only implemented cataloguing and circulation modules. Otunla (2016) reported that of five libraries that adopted and used the Koha ILS among academic libraries in Osun state, all the five libraries implemented a cataloguing module, 3 implemented a circulation module, while only one library implemented all the modules. The findings further revealed that only Bowen University library use all the Koha modules. The author emphasized that libraries can only enjoy the full benefit of automation if all the modules are implemented instead of complementing the automation process with manual processing.

### **Types of Services Provided in Libraries using Koha**

Koha can be used to handle almost every function of the library, these is because the image of a library is increasingly being measured by the services it offers in terms of helping clients to access universal information rather than its respective collection (Khan and Sheik 2022). Koha has enhanced the provision of these services. Koha intergrated library open source software consist of all the modules for rendering both technical and readers services in the library ; Circulation services, Opac ,Cataloguing services, Serials services, Information resources development services and

digital services including information literacy, institutional repository, Current Awareness Services (CAS), Selective Dissemination of Information (SDI), Document Delivery Services (DDS), Inter-Library Loan Services, and specialized research support services.

This finding is in line with Ashikuzzaman (2019) who outlined all these services among others as library and information services provided in libraries. Also in the library of congress chapter on modules of library and information services it was outlined that the 21<sup>st</sup> century is characterised by the aforementioned services to be the basic types of services provided in libraries. In other words Koha Open Source Software has made it possible for libraries to shift from “traditional” to “technology-based” library services, which is very easy and gives room for more efficient and cost-effective service provision (khan and Sheik 2022).

### **Perceptions of Librarians about Koha Open Source Software**

Studies have been conducted on the perceptions of librarians about Koha ILS. Tella *et al.* (2017), examined how libraries in the Nigerian states of Kwara and Oyo use the Koha library software. The librarians in the libraries were polled to see how they felt about Koha software. According to the findings of the survey, a whopping 90% of participants had a favorable opinion of the usability of Koha. Iroaganachi, Iwu and Esse (2018) stated that Koha was the most commonly adopted software and perceived to be most available to academic libraries from South-West Nigeria universities.

Ogbene and Adetimirin (2013) found that Koha was adopted because of integration, ease of use, accessibility, and flexibility in two private universities studied in Nigeria. Uzomba, Oyebola and Izuchukwu (2015) studied the use and application of open source integrated library systems in academic libraries in Nigeria using Koha as an example. The authors stated that one of the justifications for adopting Koha according to 92% of the respondents is flexibility, 88% for reliability, 84% for efficiency, 80% for user-friendliness and unified management, and 76% for the low cost of maintenance amongst others. House (2016) also reported that Koha was adopted in Deutsche Schule Charlotte Library because of its easy installation and web-based interface.

Ponelis and Adoma (2018) examined open source integrated library systems in academic libraries in Uganda. The finding showed that academic libraries in Uganda adopted open source ILS flexibility and affordable cost. The study further revealed that Koha was the most adopted ILS in Uganda and was also being considered by libraries without any ILS or proprietary library software.

Rafiq and Ameen (2009) studied 370 respondents from 48 countries, and the result reveals that the perception of libraries toward open source software (OSS) adoption is positive. Kampa and Kaushik (2019) examined the adoption and use of open source software and the economic impact on academic libraries in India. The findings showed that Koha, Dspace, Drupal and Joomla are the most used OSS among libraries in India. On the economic impact, the result showed that

“university libraries in India could save estimated Rs 417m by adopting open sources ILS like Koha”. In Nigeria, many libraries cannot automate their operation because of the high cost of proprietary software.

Akpokodje and Akpokodje (2015) reported that University of Jos migrated from integrated

Technical Services (ITS) for windows and Virtua ILS's to Koha ILS. The authors stated that Koha was selected by the library out of necessity. They found that Open Source ILSs are more cost effective than proprietary ILSs. Another study by Amando, Martyns, Bibot and Dajab (2018) pointed that Koha ILS adoption by the University of Jos Library was a relief which helped the library to as save a lot of money they would have incurred on proprietary software.

### **Attitude of Librarians towards adoption of KOHA Open Source Software**

Many studies have been conducted on the attitude of librarians towards the adoption of Koha. Jummai (2022) found that have a favorable disposition towards Koha. According to Letowski et al(2022), the majority of university librarians favor open source software because it is backed by tested, reliable technologies and is used by hundreds of libraries around the world. Research indicates that librarians are generally open to utilizing the features in Koha and have a favorable disposition toward it use. There is a strong correlation between the perceived benefit of adopting Koha ILS and behaviors related to it, highlighting the significance of on-going training and awareness campaigns for library professionals regarding the various modules in Koha. Librarians are generally in favor of Koha and are aware of it advantages in improving library technical processes and services. Continuous training and awareness programs are recommended to enhance librarians' understanding and utilization of the various modules of the Koha Integrated Library System.

**Challenges affecting the adoption of KOHA open source Software in Libraries**

The challenges that affect the adoption OSS like Koha have been widely investigated. According to Bwalya, Akakandelwa and Dobрева-McPherson (2019), the motivation for the adoption FOSS in developed and developing countries are different. The authors pointed out that countries, institutions and individuals are migrating from proprietary software to FOSS due to the increased costs to purchase and maintain proprietary software and the increased commitment to open content and technologies in key areas such as research and education. Gangadharan (2017) mentioned that the ability to achieve a higher degree of vendor independence, interoperability and potential cost reductions motivates countries, institutions and individuals to adopt FOSS. However, the adoption of Koha in libraries is not void of issues which accompany it. For instance, Tella *et al.* (2017) identified some factors that influence the use or nonuse of Koha and the challenges that are encountered during the installation and use of Koha. The authors stated that adopting Koha was plagued by power failure, poor management and lack of in-house expertise, inadequate infrastructure and vendors' inadequacy.

According to Khan *et al.* (2018), the Government College University libraries in Lahore adopted Koha because of the software's multilingual support. However, revealed by the study was that there were many difficulties during implementation such as, lack of technical skills, lack of knowledge about the Linux OS, shortage of skilled manpower, slow internet speeds, approval from the organization, and complex procedures of data migration. It was also found that due to lack of educational resources, Sri Lankan librarians are having difficulty learning about Koha. According to Jamogha *et al.* (2021a), one of the most significant challenges associated with utilizing Koha was that library workers did not receive sufficient training. The majority of librarians are unable to participate in training workshops on Koha because of their busy work schedules and the cost of attending these workshops. Workshops typically last two to three days, which is not enough time to become proficient in Koha.

According to Jamogha *et al.*, (2021b), one problem with using Koha was that library staff didn't get enough training on how to use it. Therefore, it was suggested that there should be regular training on how to use Koha and that the management of libraries should draw and carry out strategic decisions that would help achieve the useful goals behind Koha. Further, Khan and Ayesha (2021) stated that to handle the bibliographic data of library materials, free and opensource software is

frequently employed in academic libraries in Pakistani university libraries, but due slow internet connectivity this has also not been efficient.

### **Methodology**

Qualitative research methodology was employed for this study using narrative based design. The population of the study comprised six (6) library staff of the skyline university library which included the information technologists, the system analyst the automation librarian among others. Interview was used to obtain data from the six library staff in the library. Narrative analysis was used to analyze the data obtained for the study.

### **Findings of the study**

On the question regarding the types of services provided in the library using Koha the participants stated that technical services and readers services were provided in both physical and electronic form. Technical services included acquisition, cataloguing and preservation services, while readers' services were circulation, reference and serials services. Digital services included information literacy, institutional repository and OPAC. Others include Current Awareness Services (CAS), Selective Dissemination of Information (SDI), Document Delivery Services (DDS), Inter-Library Loan Services, specialized research support services. This finding is in line with Ashikuzzaman (2019) who outlined all these services among others as library and information services provided in libraries.

Findings with regards to the perception of library staff about Koha adoption showed that all the participants agreed that they had a positive perception about the adoption of Koha. In terms of perceived usefulness, they agreed that KOHA has enhanced their work performance and experience, improved their efficiency and productivity and positively impacted on the library's relevance. On perceived ease of use they agreed that Koha is easy to use because of its flexibility and adaptability. This finding corroborates with Ogbene and Adetimirin (2013) who found that Koha was adopted because of integration, ease of use, accessibility, and flexibility. Uzomba, Oyebola and Izuchukwu (2015) observed that one of the justifications for adopting Koha was its flexibility, reliability, efficiency, user-friendliness, unified management, and low cost of maintenance amongst others.

Findings also revealed that the participants had a positive attitude and sentiment towards Koha because it is open source, requires no subscription, can be modified to meet the library's specific needs, and provides community and multilingual support and cost effective. This is in line with the

findings of Jummai (2022) who found that librarians have a favorable disposition towards Koha. Sobolaji et al (2018), agreed that majority of university librarians favor open source software because it is backed by tested, reliable technologies and is used by hundreds of libraries around the world.

Findings regarding the challenges the library face with the adoption of Koha indicates that slow technical skills, internet speed, epileptic power supply and man power shortage are some of the issues they face. This corroborates with Tella *et al.* (2017) who identified that adopting Koha was plagued by power failure, poor management and lack of in-house expertise, inadequate infrastructure and vendors' inadequacy. Khan *et al.* (2018), also identified low internet speeds as one of the challenges experienced with the adopting Koha among others.

### **Conclusion**

The study investigated the adoption of Koha open source software at Skyline University Library, Nigeria. It examined the library services, staff perceptions, attitudes and challenges regarding Koha adoption. The qualitative study involved interviews with 6 library staff, analyzed using narrative analysis. Findings showed the staff had positive perceptions and attitudes towards Koha, citing its usefulness, ease of use and cost effectiveness. However, poor internet and power supply were identified as key challenges. The study recommended improving infrastructure to optimize Koha adoption.

### **Recommendation**

1. Management of Skyline University Library should provide in-depth training of staff technical areas of Koha like the use of Linux operating systems to enhance data migration and improve IT skills of the staff.
2. Adequate infrastructure should be provided in form of speedy internet connectivity and stable power supply.
3. The management of the library should more staff to overcome the issue of man power shortage.

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