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A Survey of Adoption and Use of Koha Library Integrated System in Nigeria

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Abstract

The study aimed to find out the adoption and use of Koha ILS in Nigeria by identifying the types of libraries that have adopted Koha in the six geo-political zones in Nigeria, the reasons for the adoption and the level of satisfaction with Koha ILS. The study adopted a survey research design. All the sixty-nine (69) libraries that had adopted Koha ILS in Nigeria as of September 2021 were enumerated. A structured questionnaire was developed using google form, and the link sent via various WhatsApp platforms of the Nigerian Library Association. Fifty-three (53) represented 76.8% responded, and the responses were analyzed using frequency counts and percentages and presented in tables and charts. The finding revealed that Koha mostly used among libraries in the South-West geo-political zone of Nigeria and has also been adopted by different types of libraries in Nigeria. It also showed that the majority of the libraries adopted Koha ILS because it is free software and can be customized to suit their needs; it is constantly upgraded and performs all the functions needed in their library. Also, the finding showed that all the libraries were satisfied with the modules implemented in their libraries. The main challenge to Koha ILS is the lack of skills and proper training on the entire Koha module. Therefore, the paper recommends collaboration among libraries that adopted Koha ILS in Nigeria. The paper further recommended Koha ILS to libraries that are yet to implement automation projects.

Keywords: Koha Integrated Library System, Koha adoption and use, Open source software, Library automation, Nigeria.

Introduction

The history of library automation in Nigeria is more than three decades. Most of the library that automated early were university libraries and very few research libraries. These libraries started by using proprietary software, but abandoned the software because of challenges they were facing. The major challenge is the cost of proprietary software, in which many libraries find it difficult to pay the annual subscription fees due to lack of funds. This has resulted in some libraries abandoning the automation process while others moved from one library management software to another. For instance, Otunla (2016) stated that "despite the early adoption of automation in Nigeria, many academic libraries are still struggling to automate their services today while some of the early adopters have been migrating from one library software to another due to failures recorded".

Today, some of the older academic libraries are migrating to Koha, some of the newly established libraries, especially the private university libraries in Nigeria, have adopted its use in their libraries. The introduction of open source software has allowed many libraries who had suffered one setback or the other in their automation effort to start again and those who just started automation for the first time to adopt open source. There are many open source Library Management Software today, they include Evergreen, NewGenLib, EspaBiblio, InfoCID, Emilda OPALS, Koha, Gnuteca, Jayuya, Biblio, OpenBiblio, etc. Amongst these open source software, Koha is the most used by many libraries in Nigeria. Since Koha started in 2000, many libraries in Nigeria have adopted its use in their libraries. This paper, therefore, seeks to examine the adoption and use of Koha ILS in Nigeria.

Objectives

- Find out the extent of Koha ILS adoption by geo-political zones in Nigeria
- Identify types of libraries that have implemented Koha ILS by geo-political zones in Nigeria
- Determine reasons for adoption of Koha ILS by libraries in Nigeria
- Identify the Koha module implemented by libraries in Nigeria
- Determine the level of satisfaction with the use of Koha modules
- Identify barriers to effective Implementation of Koha ILS in Nigeria

Literature review

Open Source

Kumar and Jasimudeen (2012) and Engard (2011) described Open source software (OSS) as software that users have ability to run, copy, distribute, study, change, share and improve for any purpose and whose source code is made available for use or modification in line with users' needs and requirements known with some characteristics which make it distinct from proprietary software. Open source software enables community participation and allows libraries to take responsibility for their computing environment through customization to suit their needs.

Riewe (2008) surveyed Open Source Integrated Library Systems, the study compared the costs and benefits between an open and a closed source ILS. The finding indicated that open source ILSs were more cost-effective than proprietary ILSs. The author also reported that libraries chose open source ILSs because it is affordable, and that they do not cost as much as proprietary ILSs. The author added that open source ILSs users were “modestly more satisfied than users of proprietary ILSs."

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 finding 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 an estimated Rs 417m by adopting open sources ILS like Koha”.

Today, 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. In Nigeria, many libraries cannot automate their operation because of the high cost of proprietary software. The few libraries

that could do so were government-owned. For example, Ukachi, Nwachukwu and Onuoha (2014) stated that very few libraries were able to acquire software due to their overall high cost. Otunla (2016) stated that open source had enabled libraries in Nigeria to implement their automation process.

Koha adoption and use

Koha is in use worldwide in American, Europe, Africa, Asia, Middle East as well as Oceania; Koha has been in used in libraries of all types and sizes like academic, research, public, special and school libraries. Krishnamurthy (2008) confirmed that Koha ILS is used globally in over one hundred institutions. Sheeja (2009) conducted 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 library management software in the world. 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. That was over a decade ago; the number would have increased by now. Archana, Padmakumar and Beena (2014) reported that Cochin University of Scence 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 utilised 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. Iroaganachi, Iwu and Esse (2015) stated that Koha was the most commonly adopted software and perceived to be most available to academic libraries from South-West Nigeria universities. Otunla (2016) found that five of the seven libraries that implemented automation process in Osun state, Nigeria, adopted and used Koha ILS.

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 author stated that Koha was selected at the library out of necessity. The authors 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; it has saved a lot of money they would have incurred on proprietary software.

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 (Koha and SLAM) of which 12 are using Koha. Furthermore, 4 out of the library using Koha migrated from proprietary library software to Koha because of high cost of maintaining proprietary software. The authors recommended adoption of open source that is free compared to proprietary library software.

Reasons for Koha adoption by libraries had been identified by researcher, for instance, Gerhard (2008) stated the reason for adopting Koha at the Royal London Homoeopathic Hospital was because of the GNU license (open source) that was considered more future-proof than proprietary products, and more open to customization to meet the special needs of the library. Budgeting and dissatisfaction with proprietary software previously being used were identified by Keast (2010) among Australian libraries and Poulter (2010) in India as reasons for Koha adoption in the two countries. 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.

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 finding 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. Ukachi (2012) studied awareness, availability and utilization of open source software in Nigerian libraries to identify the level of awareness, the extent of use, challenges and prospects of the use of open source software in Nigerian libraries. Forty-two libraries participated in the study. Finding indicated that most of the libraries are not aware of the open source software while 5 out of these libraries are using Koha. Result further showed that out of the five libraries using Koha, only one library presently uses all the modules, 2 (4.8%) libraries use cataloguing only, 3 (7.1%) libraries use both cataloguing and circulation, and 2 (4.8%) use it in their serials sections.

On the users satisfaction with Koha ILS, a survey of 24 members of staff in the University of Jos Library in Nigeria indicated overall staff satisfaction with the use of KOHA ILS (Akpokodje and Akpokodje, 2015). Tella et al (2017) reported that the majority of the library professionals in the libraries studied are highly satisfied with the use of Koha software and would recommend it to other libraries. Rafiq and Ameen (2009) testified that the respondents in their studies have a positive perception of Koha ILS adoption. Omopupa, Adedeji and Sulyman-Haroon (2019) reported that users of Koha ILS at the University of Ilorin Library attested to the fact that Koha's effectiveness and efficiency are high because all forms of the library operations had significantly improved, and the library users have access to library collection anytime and anywhere. The authors testified that the respondents in their study had positive perception of Koha ILS adoption. Thus they are satisfied with Koha's performance. Uzomba (2015) reported that Koha demonstrated reliability and usefulness among all the open source software available in Nigeria. Otunla and Akanmu-Adeyemo's (2010) study also shows that users of Koha at Bowen University Library indicated that Koha ILS is good and were satisfied using the software.

As much as users were satisfied with Koha ILS, there are challenges associated with its use. For instance, Amando et al (2018) findings showed that internet connectivity, technical know-how, lack of training, non-use of all the modules, and difficulties in Koha

customization, amongst others were the challenges recorded in their study. Omopupa, Adedreji, and Sulyman-Haroon's (2019) findings revealed that a lack of adequate training is responsible for the non-implementation of some of the modules in their library. Tella et al (2017) also found that power supply, and inadequate in-house experts are the major challenges faced by the four selected libraries that implemented Koha ILS in Nigeria.

Methodology

The study adopts a survey research design. The population of the study consists of all libraries that use Koha ILS in Nigeria. Forty-three names of libraries that installed Koha were obtained from Projektlink (major vendor for installation and customization of Koha ILS in Nigeria). Other libraries not included on the list obtained from Projektlink were identified through personal contact and literature on library automation in Nigeria. A total of sixty-nine (69) libraries were identified as using Koha ILS in Nigeria as of September 2021. Since the population is small, all the 69 libraries were enumerated. A structured questionnaire was developed using a google form, and a link to the questionnaire are sent to the various WhatsApp platforms of the Nigerian Library Associations. Fifty-three (53) libraries which represented 76.8% responded. Responses were analyzed using frequency counts and percentages and were presented in tables and charts.

Result of the Findings

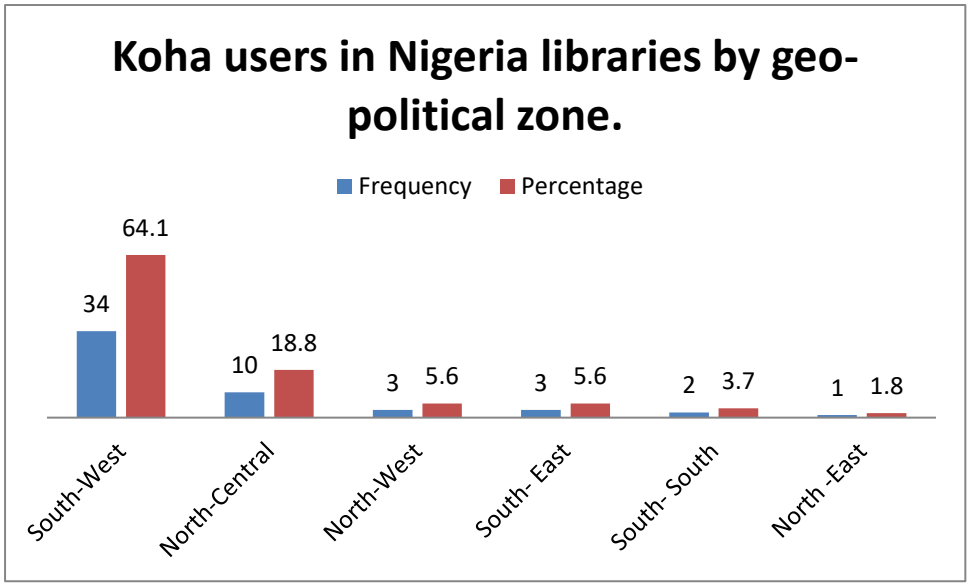

Figure 1: Koha users in Nigerian libraries by geopolitical zone

Figure 1 shows Koha users in Nigeria libraries by geopolitical zone. South West tops the list with 64.1%, followed by the North Central with 18.8%, 5.6% in the North West and South East, 3.7% in the South-South while only 1.8% in the North East. This finding revealed that Koha is well adopted and used in the South-West geopolitical zone of Nigeria.

Table 1: Koha users by types of library in the six geo-political zones of Nigeria

Type of library	**South-west**	**South - east**	**South-south**	**North-central**	**North -east**	**North-west**	**Total**
Academic	26	3	2	7	1	2	41(77.3%)
Research	4	0	0	1	0	1	6(11.3%)
Special	3	0	0	1	0	0	4(7.5%)
Public	1	0	0	1	0	0	2 (3.7%)
Total	34	3	2	10	1	3	53(100%)

Table 1 depicts Koha users by library type based on the six geopolitical zones in Nigeria. Out of 53 libraries that responded, a total of 41 (77.3%) were from academic libraries; 6 (11.3%) were from research libraries, 4(7.5%) from special libraries and only 2(3.7%) were from public libraries. The result also revealed that a total of 41 academic libraries had implemented Koha ILS in Nigeria, of which 26 (63.4%) were from the South-west geopolitical zone in Nigeria. This finding indicates that academic libraries, especially, in the South-West, Nigeria adopted and used Koha ILS more than other types of libraries.

Table 2: Reasons for Koha adoption

Reasons My library adopted Koha ILS because:	Agree	disagree	Don't know
It is free and open source software	53 (100%)	0	0
It can be customized to suit library needs	53(100%)	0	0
Constant upgrade of Koha	53(100%)	0	0
No vendor lock-in	51 (96.2%)	0	2(3.7%)
Koha performs all the functions needed in my library	48 (90.5%)	3(5.6%)	2(3.7%)
No maintenance fee	45(84.9%)	3(5.6%)	5(9.4%)
Popularity among libraries in Nigeria	39(73.5%)	8(15.0%)	6(11.3%)
Technical feasibility and support	42(79.2%)	9	2(3.7%)

Table 2 shows the reasons for Koha's adoption by libraries in Nigeria. The finding showed that all respondents (100%) agreed that they adopted Koha because it is free and open source software; it can be customized to suit library needs and constant upgrades of Koha. The result also showed that 96.2% of the respondents agreed that there was no vendor lock-in, while 90.5% agreed with the statement that Koha performs all the functions needed in their library.

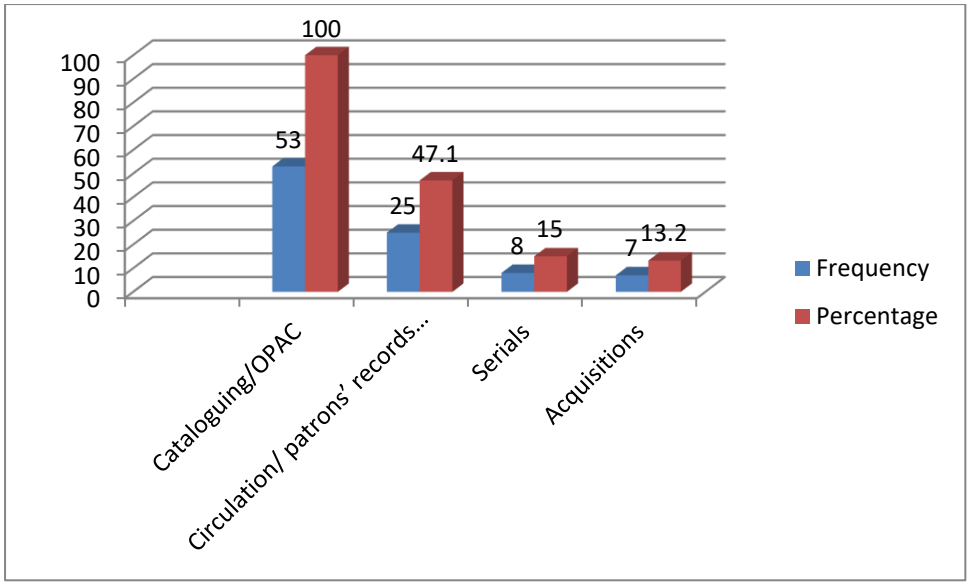

Figure 2: Koha modules implemented by libraries in Nigeria

Figure 2 shows Koha modules implemented by libraries in Nigeria. The finding revealed all (100%) of the libraries had implemented Cataloguing/OPAC; 25(47.1%) implemented circulation and patrons records management module, 8(15.0%) serials module while acquisitions module was implemented by 7(13.2%). It implies that not all the Koha modules were implemented in libraries in Nigeria.

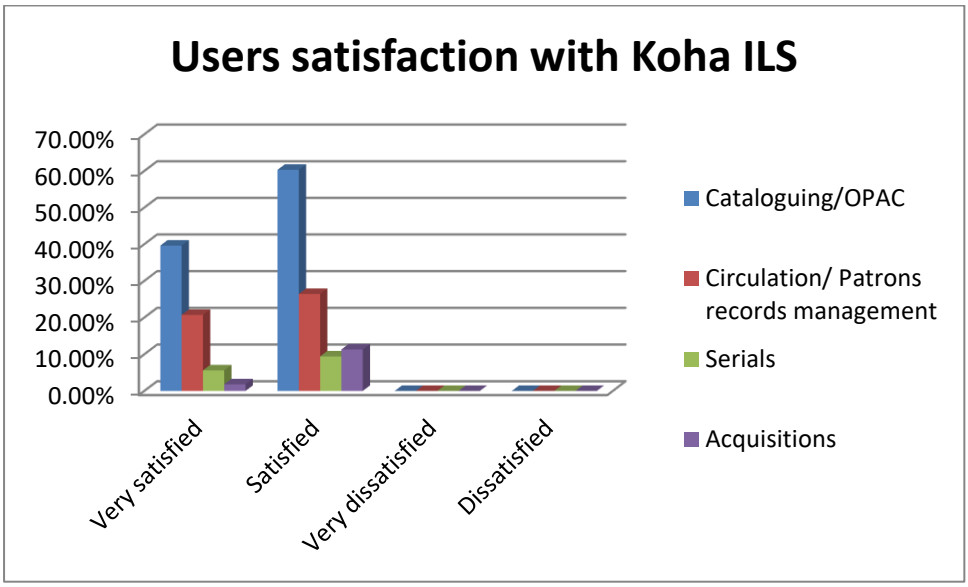

Figure 3: Respondents Satisfaction with Koha Module

Respondents were requested to indicate their level of satisfaction with the Koha module implemented in by various libraries. When combining very satisfied and satisfied, the finding shows that all (100%) of the libraries were satisfied with the cataloguing/OPAC module. All 25 libraries that implemented circulation and patrons' management modules were satisfied; from the eight libraries that had implemented the serials module, all were also satisfied. All the seven libraries that had implemented the acquisitions module were all satisfied. The

finding implies that none of the respondents was dissatisfied with the module used in their library.

Table 3: Challenges to use of Koha ILS

Challenges	**Frequency**	**Percentage**
Difficulties in using some Koha modules	47	88.6%
Inadequate training on all the Koha modules	45	84.9%
Epileptic power supply	35	66.0%
Upgrading into latest version of Koha is difficult	31	58.5%
Difficulty in resolving system crash	29	54.7%
Librarian's attitude towards automation	26	49.0%
Poor ICT skills among Librarians	21	39.6%

The challenges to the use Koha ILS are depicted in Table 3. The major challenge faced by the Koha users is difficulties in using some Koha modules, as indicated by 88.6%. Inadequate training on all the Koha modules accounted for 84.9% of the respondents, 66.0% indicated epileptic power supply, and the least challenge as indicated by 39.6% of the respondents, was the poor ICT skills among Librarians.

Discussion of findings

Koha ILS offers opportunities to many libraries irrespective of their sizes, types and locations; it is adopted and used in libraries throughout the world. This study showed that Koha ILS is adopted and used by different types of libraries in Nigeria.The first major finding showed that among the 6 geo-political zones in Nigeria, 41 out of 53 libraries using Koha ILS were from South-West, Nigeria. The study also found that academic libraries adopted and used Koha ILS most among different types of libraries in Nigeria. The finding of this study agreed with Ojo and Otunla (2018) on the automation of university libraries in the South-West, Nigeria and the study revealed that 50% of the libraries we're using Koha ILS. Likewise, Iroaganachi, Iwu and Esse (2015) found that Koha was the most commonly adopted software among the academic libraries, especially university libraries in the South-West, Nigeria. The reason for the popularity and adoption of Koha ILS in the South-west, Nigeria, could be because the first research institute and university to use Koha in Nigeria are from the South-west, Nigeria and probably because the first Koha vendor is in the South-west, Nigeria.

The study also revealed the reasons for Koha's adoption in Nigeria. The main reasons for Koha's adoption in Nigerian libraries surveyed were because it is free and open source software, customized to suit library needs and Koha's constant upgrading. Keast (2010) and Poulter (2010) agree with this finding. Gerhard (2008) also supported this finding; the author reported that the reason for adopting Koha at the Royal London Homoeopathic Hospital was because it is open source and allows for customization. Many libraries in Nigeria are experiencing a lack of funds; therefore, adopting Koha ILS is the best option since Koha could also perform all the housekeeping functions as the proprietary software. Koha ILS

serves as a great relief to most libraries in Nigeria, especially those libraries that migrated from proprietary software to Koha. The reason is that they will no longer pay annual subscription fees, and such funds could be used for other pressing needs. Also, many libraries that experience inadequate funding will benefit by adopting Koha ILS for their automation process.

Another finding showed the type of modules used by libraries in Nigeria; the cataloguing/OPAC module was found to be in high use among all the libraries, circulation and patron records management modules were used by almost half of the respondents; Serials and acquisitions modules were less used. The findings of Omopupa, Adedeji, and Sulyman-Haroon (2019), Otunla (2016) and Ukachi (2012) corroborated this finding that cataloguing and OPAC module are in high use while serials, circulation and acquisitions modules are at low levels. It indicates that most libraries which adopted and use Koha in Nigeria are not ready to implement other modules. It also implies that they were still using manual processes to complement their automation processes. Koha is an integrated library system; therefore, the implementation of all modules enables libraries to enjoy the full benefit of Koha ILS.

Another major finding is on satisfaction with Koha modules; none of the respondents was dissatisfied with the module used in their library. The study found that all Koha users were satisfied with the Koha module implemented in their various libraries. Studies by Tella et al., (2017) and Otunla and Akanmu-Adeyemo (2010) are in support of this finding. Likewise, Akpokodje and Akpokodje (2015) found that 24 library staff indicated overall staff satisfaction with the use of Koha ILS at the University of Jos.

The topmost challenges faced by Koha users are difficulties in using some of the Koha modules, inadequate training on all the Koha modules, and erratic power supply. The findings of Tella et al., (2017) and Amando et al., (2018) corroborate this finding that lack of training and inadequate in-house experts are the main challenges faced in the libraries studied. The difficulties in using all the Koha modules may be associated with a lack of adequate training because it is evident in the study that most libraries are not using all the modules. Therefore, the training and retraining of librarians handling different Koha modules are essential. The erratic power supply as a challenge needs to be looked into because an adequate power supply is a requirement for the smooth running of library automation. Without this, the library cannot work, especially after all the modules have been implemented. .

Conclusion and recommendations

Koha ILS has become popular in Nigeria; it is adopted and used by different types of libraries across the six geo-political zones in Nigeria. Koha is cost-effective, and many users have testified that it has helped improve various library housekeeping chores and services. Previous studies rated Koha's performance as very good, and they were satisfied with the modules. Since Koha is open source, more libraries should embrace it. Based on the findings, the following recommendations are made. .

- Koha ILS is open software, therefore, recommended for libraries that are yet to implement any automation project to consider Koha ILS and those that could no longer afford to pay for the subscription to proprietary software;

- There should be collaboration among libraries using Koha ILS in Nigeria, this is to enable those who are well versed in using all the modules to assist in training other libraries;
- Head of libraries should allow staff to improve on the module used by sending the librarians to go for training and
- Provision of an alternative power supply like a generator or inverter powered by solar to reduce the problem of erratic power supply.

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