2022

Comparative Study for Assessment of Koha and SLIMS Features in Public Sector College Libraries of Sindh

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Abstract

The core aim of the study was to assess KOHA and SLiMS features in Government College Libraries of Sindh. The objectives of the study were (a) to explore the reasons of Koha and SLiMS adoption and (b) to recognize the problems face by library professionals in the implementation of Koha and SLiMS. To meet the objectives, the study used a quantitative research approach and the survey method based on the questionnaire. Purposive sampling technique was used. The data was gathered only from those librarians who were working in Govt Colleges of Karachi, Hyderabad, and Sukkur and were using Koha or SLiM software for the purpose of library automation. The response was received from 73 librarians out of 97. This study found that libraries were adopting Koha because Koha provided search facility for copy cataloguing through Z39.50, Koha provides multilingual support. It has popularity among professional community. It provides MARC21 standard for cataloguing and provision of discovery

features. This study discovered that libraries adopted SLiMS due to availability of Web OPAC, MARC21 standard for cataloguing, multilingual support, and search facility for copy cataloguing through Z39.50. The study highlighted that library professionals encountered problems during the implementation of Koha included shortage of skilled manpower to install and maintain the software, shortage of finance for hardware requirement, and up-gradation of Koha versions development of software. The present study reported that requirement of highly networked and integrated environment, up gradation of SLiMS versions, support issues of UTF-8 languages, and shortage of finance for hardware requirement were the major problems in the implementation of SLiMS software.

Keywords: *Library automation; Koha, SLiMS, Integrated software, Library automation software, Information management software.*

Background and Introduction to the Study:

Information technology has permeated in every field of life. The information technology was adopted by libraries in the start of its growth. Information technology enhances the services of libraries and made easy daily activities of the library. According to Mahmood (1996), "Information Communication Technologies (ICT) have the capability of managing large amounts of data efficiently; therefore, libraries had implemented it in all areas including acquisition, classification, cataloguing, serial control, and circulation". Vijayakumar and Vijayan (2011) stated that "IT helps to progress the rank of the library and it condense the work stack of the library professions". Shahzad (2021) mentioned that library professionals needed ICTs skills to automate libraries and offer innovative services through smart devices.

Library automation is the use of computer to perform the library functions like acquisition, cataloguing, classification, circulation and serial control. The start of use of the computer in Pakistani libraries was in the late 1990s. "Pakistan Scientific and Technological Information Centre" (PASTIC) introduced computer first time in Pakistani libraries for union catalogue of scientific periodicals (Haider, 1998).

Nowadays Open Source Software (OSS) has got the popularity and most of libraries around the world are using it. Rafiq and Amin (2009) stated that "OSS is computer software whose source code is available under a license that permits users to use, change, and improve the software, and to redistribute it in modified or unmodified form". Developers who have access to a computer program's source code can enhance that program by adding elements to it or settling parts that don't generally work effectively. Kumar and Jayapradeep (2015) said "a variety of OSS is evolved for library automation across the world".

Koha Integrated Library Software

The word "Koha" comes from a native language of New Zealand named Maori. The mean of the word Koha is "gift" or "donation". Koha Integrated Library System (ILS) is a full feathered open source integrated library system. Katipo Communications Limited (KCL) started work on Koha in September 6, 1999 on the request of Harowhenua Library Trust (HLT), New Zealand. Koha was implemented first time in January 1, 2000 by HLT. Koha was released under the most renowned and adaptable General Public License (GNU).

Pearl programming is used to write the Koha ILS. Koha is supporting various operating system includes Linux, Unix and Window operating systems. MYSQL database is available in the Koha for inventory of the data. Due to availability of apache, Koha is able to serve on web. Many standards and protocols is built in Koha includes MARC 21, Z39.50. Few hardware resources are required for the implementation of Koha (Sheeja, 2009). According to Singh and Sanaman (2011), Koha has received many awards including winner of the "Not for Profit section of the 2000 Interactive New Zealand award" in 2000, winner of 3M Award for "Innovation in Libraries" in 2000, winner of the public organization section of the "Les Trophées du Libre" in 2003, winner "Use of IT in a Not-for-Profit Organization Computerworld Excellence Award" in 2004.

SENAYAN Library Management System

The Senayan Library Management System (SLiMS) was created by the National Education Information and Public Relations Center in 2007. The creation of SLiMS was spearheaded by developers who are all alumni of Indonesia's leading universities' Department of Library Sciences. The teams of developers of Senayan Library Management System (SLiMS) were included “Hendro Wicaksono”, “Arie Nugraha”, “Wardiyono”, “Arif Syamsuddin”, and “M. Rasyid Ridho”, “Eddy Subrata (IT consultant)” and “Indra Sutriadi (Physics teacher)”. SLiMS is dramatically evolving. This platform has been modified fourteen times from the Senayan3 Stable 3 system to the Senayan version 7 systems since its release in late 2007.

Since SLiMS is developed based on Unicode, it completely supports Bangla input, and also it was very good built-in feature of Digital Library and Institutional Repository. Senayan Library Management System (SLiMS) is library management system software with open source licensed under GPL v3. This application was first developed and used by the Library of the Ministry of National Education, Information Center and Public Relations, Ministry of National Education. As time goes by, this application was developed by the user community and SLiMS activists. The SLiMS application is built using PHP, MySQL database and Git version controllers. In 2009, SLiMS received first-rate awards at the 2009 INAICTA event for the Open Source category.

Some facilities available to users of the Senayan Library Management System (SLiMS) application, include the Online Public Access Catalog (OPAC) with thumbnails featuring book covers; there is a simple search mode (Simple Search) and Advanced Search; book description details are also available XML format (Extensible Markup Language) for web service needs; efficient bibliographic data management minimizes data redundancy; master file / dictionary.

Statement of Problem

The use of software to perform the basic operation of library is necessary in these days. Almost every library is using different software for the purpose of library automation. Libraries are using library automation software because to accomplish the goal of providing information on right time. In Pakistan, a verity of software are being used in academic libraries. As reported by Asim and Mairaj (2019), 22 university libraries were using Koha ILS in Punjab. However, nowadays SLiMS got attraction among library professionals due to provision of functions and features. It is good addition in library automation.

No study is carried out on SLiMS yet in Pakistan. The present study will present the comparison of Koha ans SLiMS features study will highlight the reasons to adoption of Koha and SLiMS in public sector college libraries of Sindh. The present study will identify the problems and hurdles faced by library professionals in the implementation of Koha or SLiMS. It will be helpful for library professionals to choose the most suitable software for library automation purpose. Current study will fill the gap in the literature.

Research Questions:

1. What are the reasons to adopt the Koha and SLiMS software?
2. Which kinds of problems occur during the implementation of Koha and SLiMS?

Related Studies:

Literature review is an integral part of any types of research. It gives the strength to the researcher in understanding of the selected topic. It also gives information about already conducted research studies on particular topic. Due to review of the literature, a researcher can establish the gaps in existing literature. It provides more knowledge and clarity about the topic. Moreover, it also helps to develop the instrument for data collection. The past research studies conducted on Koha have been reviewed and organized chronologically under headings.

Studies Conducted at International Level

Zico (2009) conducted a study on implementation of Koha software at BRAC University library. He said that library committee decided to implement Koha software in the library because proprietary software didn't fulfill the need of the library. He reported that many challenges were faced during the implementation such as data migration, customization, lack of technical expertise, and lack of coordination. He further reported that Koha was fully supported to Bengali language and 2100 records were imported in Koha. He discovered that every module of Koha including acquisition, cataloging, patron, circulation, reports, and OPAC were working in excellent way. Moreover, he concluded that Koha software had the capability to fulfill the need of automation.

Tajoli et al. (2011) discussed OSS diffusion in Italian libraries in which they described the features and functions of Koha software. They said that Koha is composed of two parts, one is OPAC (user interface) and other is staff client (librarian interface). They discovered that cataloging, circulation, patron management, acquisition, serials and report modules were available in Koha software. All the modules could be customized according to the library need. They described that Z39.50 facility was the excellent feature of Koha and through this facility a cataloger can catalog a book in least time. Moreover, patrons can check their circulation history, fines, reservation and suggest specific material for the library through log-in to OPAC. They discovered that Koha was not only simple but also the complete ILS, and had the ability to fulfill the need of automation of any library. They mentioned that Consorzio Interuniversitario Lombardo per l'Elaborazione Automatica (CILEA) was a library foundation playing a vital role in the adaption of Koha in Italian libraries. They concluded that CILEA had developed and maintained the documentation of Koha and a new user of Koha could understand easily the working of Koha.

Walls (2011) migrated from innovative interfaces Millennium to Koha software at New York University Health Sciences (NYUHS) library. He stated that Millennium

software was also an integrated library system and NYUHS library was using it since over 15 years. He found problems encountered during the implementation were mapping the bibliographic data from Millennium into Koha during the preparation of migration, extracting data from Millennium, data conversion, migration of patron records. Furthermore, he added that after the implementation of Koha, the work flow of NYUHS library had been changed. Now NYUHS Library is using acquisition module for library material and Z39.50 function has been reduced the time for material processing.

Keast (2011) evaluated Koha integrated library software adoption in special libraries of Australia. The researcher used the survey method to get the opinions about Koha ILS who are using it in special libraries of Australia. He also discussed a case study of the installation of Koha at Australian health library network in his study. He said that main reasons for conversion to Koha were low cost, dissatisfaction with conventional library system and the excellent performance of Koha ILS modules. He said in his study that Koha enabled many libraries to enhance the services for their remote users; in past due to financial problem libraries do not show their presence on the web but now Koha is providing this opportunity through its OPAC. Furthermore, he added that Koha is suggested as a worthy of consideration for those librarians who searching low cost software. He concluded that remote users of can connected with Koha through internet from any place of the world.

Omeluzor et al. (2012) discussed process of Koha implementation at library of Babcock University (B.U), Nigeria. The study used questionnaire as an instrument for the purpose of data gathering. He found that after installation of Koha ILMS, data entry and data migration process has successfully been done at B.U library. They found that first problem occurred was unnecessary data entry fields of cataloguing module during implementation; however the technical librarian modified the data entry fields and eliminated unnecessary fields. They stated that Koha open source software has no vendor support that can dictate and argue with librarians. They found problems during implementation of Koha ILMS which included: poor supervision, management didn't provide motivation, lack of power supply and inadequate man power. They said in his study

that B.U library used X-lib software prior to the accomplishment of Koha; and Xl-lib software was not MARC based software; however MarcEdit software used for data conversion process and MarcEdit software made data in a format that Koha can accept the data. They reported that hundred percent respondents were agreed that workshops on Koha ILMS should be conducted for the training of library staff.

Ogbenege and Adetimirin (2013) explained selection and uses of Koha software in two private Nigerian universities. Data was collected from 176 machine librarians and head librarians at Nigeria's Bowen and Redeemers private universities using questionnaires, interviews, and observation techniques. They mentioned that due to the shortcomings of proprietary software, the Redeemers University (RU) library migrated to Koha from the library portal in 2011. Before deciding on Koha, the RU library team had several meetings and welcomed vendors. They claimed that the RU system librarians preferred Koha because of its free access, accessibility, ease of use, ability to run on Windows, and relatively wide user group system. The system librarians and unit heads of BU selected the Koha software due to the accessibility, easy to use, ability to run on Linux, and flexibility. They suggested that before choosing any software, library must be clear about their objective, user's needs, current infrastructure, and test the software before the final selection.

Ahammad (2014) described how the Koha integrated library system was implemented at the Independent University, Bangladesh (IUB). The study described the author's practical experiences regarding implementation of the Koha ILS at IUB. He discovered that Koha had all the functionalities and can fulfill automation need in any library. He said that implementation procedure of Koha was easy and anyone who has some technical skills can implement it in the library. He found that Koha can run on standard desktop or server machine. Minimum requirement of hardware for Koha is Pentium III, hard disk of one gigabyte space, and 256 megabyte of Random Access Memory (RAM).He reported that Koha's Online Public Access Catalogue (OPAC) provides two type of search; one is the basic search and other one is advance search. He also found that Koha gave the benefits especially for developing country's libraries because in developing countries the

libraries have very small budget, and not able to purchase ILS library software. He said that many librarians want to implement Koha in their library due to its flexibility and adequate range of modules.

Mishra (2015) carried out a case study on Koha implementation at Saharanpur, India. This study was based on author's own experience and observation. Hit and trial methods were used. He discovered that before the Koha implementation library used Troodon3 software since 2004 and due to lack of many features. It was decided to shift on Koha. He said that before the final implementation, Linux based Koha was installed on test machine through a Compact Disk (CD) and after the satisfaction it was finally installed. He explained that through MarcEdit software, data converted into MARC21 format and after the conversation, the data was uploaded on Koha software. He said that he has also customized Koha's OPAC and concluded that Koha software provide excellent features including acquisition, cataloguing, circulation, serial control, renewals, reservation and charged zero cost on implementation, data migration and customization. Koha software also provides web 2.0 features and libraries can create their website through Koha OPAC by customization and if you have digital library then you can give the link on Koha OPAC and your user can get access to digital library from Koha OPAC. He recommended that due to all above mentioned features and low cost, Koha software is the best solution for libraries to fulfill the automation need.

Rahman and Rahman (2016) carried out a case study on organization of at Chittagong Veterinary and Animal Sciences University' (CVASU) library. They stated that CVASU was established in 2006. They found that library authority decided to adopt new library technologies so that they can provide up-to-date bibliographic information to the library user. They discovered that Koha was chosen for library automation due to free of cast availability. They said that one librarian and one IT expert was appointed for installation, configuration and customization of Koha. They reported that after successful installation of Koha three catalogers were appointed for cataloging and they imported bibliographic record through Z39.50 facility. They stated that CVASU library faced many challenges during implementation include lack of technical expertise, data entry in MARC

21 format, erratic power supply, and bandwidth problem. Finally, they concluded that CVASU library providing services through modern technologies and patrons are getting information quickly.

House (2017) carried out a case study on Koha implementation at "Deutsche Schule Charlotte" (DSC), United State America (USA). He discovered that library staff member presented a presentation to the administration staff of DSC and elaborated the need of ILS. He said that during the meeting of administrative and library staff of DCS, it was decided that the software will be selected which has the functions of fast check-out check-in and better inventory control system. He stated that at the beginning of implementation, two ILS including Koha and Evergreen were selected and installed on trial basis and finally Koha was selected for DSC library due to the availability of online support, easy server installation, and cost effectiveness. He found that once a system was established then training sessions were conducted for all other junior staff members of the library. He reported that network configuration, lack of knowledge about Linux, setting of email notification were the main problems faced in the implementation. Finally, he concluded that fast Check-Out and Check-In functions of Koha ILS is excellent but there is a need to work more on email notices functions.

Studies Conducted on Koha at National Level

Rafiq and Ameen (2009) concluded the issues and lessons learned in Open Source Software (OSS) adoption in Pakistani libraries. The study revealed that adoption of open source software in Pakistani libraries is just at beginning stage. Furthermore, they identified the major issues which created hindrance in adoption of OSS in Pakistani libraries that included cultural disparity, conceptual confusion, digital divide, lack of technological, financial and human resources. They stated that Librarians Working Group (LWG) made assessment on OSS for automation in libraries. The LWG choose Koha as the best OSS for automation in Pakistani libraries due to his adaptability of several languages and scripts, low cost of implementation and maintenance, availability of different versions, active participation of developers and Koha's sustainability. They also gave some recommendation regarding adoption and better use of OSS which includes Pakistan Library

Association (PLA). The LIS schools should organize workshops and seminars on importance of OSS, LIS schools must develop IT skills in students, and collaboration approach is required to handle the OSS.

Asim and Mairaj (2019) examined perceptions of library professionals about Koha adoption and their uses at university libraries of Punjab. They developed a questionnaire for data collection. They collected data from 66 library professional by using purposive sampling technique. They found that reasons behind the Koha adoption were provision of web OPAC, MARC21, and Z39.50. They highlighted problems faced by library professionals in implementation of Koha that included lack of expertise on Linux, low level of technical skills in staff, and shortage of staff.

Research Methodology:

This section presents the research method and detailed research methodology that has been used to achieve the objectives of the study. Research approach, specific research method and research plan that has been followed is described in this part. It has also presented description about research population, sampling frame and sample size. It has explained about development of data collection tool, data collection process and analysis.

Research Approach

Johnson and Onwuegbuzie (2004) stated that "research approach always follows the research questions which offer the best and suitable solution of the research problem".

Research Method

The selection of the most suitable method to attain the research objectives is one of the basic elements of research process. Survey research is the most significant research strategy being used in social sciences research. Powell (2004) highlighted that survey method is the best and suitable method for librarianship. The current study has used the survey research method.

Population

The total number of people being studied is referred to as the population. Powell (2004), a well-known scholar, described population as "any group of individuals or objects that share at least one mutual characteristic." The present study's target population was library professionals from Government college libraries in Karachi, Hyderabad, and Sukkur Divisions.

Sampling Technique

A sample is sub-group of population which is under investigation in any research study. Goode and Hatt (1952) pointed out that sample is the representative of whole population of the study". In this study, purposive sampling technique has been used to identify the particular group of population for data collection.

Sampling Frame

The researchers collected phone numbers of library professionals from institutes' website, colleagues and contacted with them to draw a list of respondents. The researchers found that 97 library professionals were working in Government colleges located at Karachi, Hyderabad, and Sukkur Divisions.

Sample size

The data was received from 73 respondents of the study. The response rate was 75.25% recorded.

Research Instrument

A questionnaire was developed to keep in mind the objectives of this study. A structured questionnaire was developed in the light of literature review. It was revised in the light of comments received by the experts and then the first draft of the instrument was developed.

Pilot Testing

Pilot testing was done on 20 respondents of the study who were not included in the original survey. The purpose of pilot testing was to get more clarity, to check the understanding of the respondents, and to observe the time taken to fill in the questionnaire. After the pilot study, some sentences in the questionnaire were rewritten and more questions were added to the questionnaire.

Final Editing of Research Instrument

Recommendations received from the pilot testing were incorporated in the questionnaire after detailed discussion with experts and hence, the questionnaire was developed for data collection.

Reliability of the Instrument

The reliability of the questionnaire was checked through Chronbach Alpha reliability test in SPSS. This test was applied on all relevant sections of the questionnaire. Table 1 revealed that Alpha value for assessment of Koha and SLiMS was 0.865. Chronbach Alpha value for reasons of Koha/SLiMS adoption was 0.832 and for problems faced in implementation of Koha/SLiMS was 0.878.

Table 1

Reliability of the questionnaire (N=84)

Sr. No	Section Name	Items Nos.	Cronbach Alpha Value
1	Assessment of Koha and SLiMS	41	0.865
2	Reasons of Koha/SLiMS adoption	15	0.832
3	Problems faced in implementation of Koha/SLiMS	16	0.878

Data Collection Procedure

After the final editing, the questionnaire was prepared on Google Form. The link of Google Docs based questionnaire was distributed through email among the respondents of the study. This link was also distributed through different WhatsApp & Facebook groups among the population of the study. The data was received from 73 respondents who were using Koha or SLiMS software for the purpose of library automation.

Data Analysis

After the completion of data collection phase, the data file in Excel sheet was downloaded from Google Docs and the numbers were assigned to each response. The data was entered into the Statistical Package for the Social Sciences (SPSS) for analysis. The mistakes committed during date entry into SPSS were corrected. The data was analyzed by using descriptive statistics, frequency and percentage count, mean, std. deviation, and variance by using SPSS software. Results were presented in tables.

Analysis and Interpretation of Data:

The core aim of the present study was to evaluate the features of Koha and SLiMS software at college libraries of Sindh. The present study used quantitative research approach. The response of questionnaire was received from 73 (response rate= 75.25%) respondents. The data was analyzed with the help of the SPSS software. The findings draw on the basis of frequency, percentage, mean, and standard deviation. The analysis of questionnaire-based data is given below in detail.

Demographic Information

The findings (Table 2) revealed that majority of the respondents 46 (63.0%) were male as compared with female 27 (37.0%) and possessed BS/MLIS/MLS degree 70 (95.9%). The results indicated that greater part of the respondents 23 (31.5%) were belonged to age group of 31-35. The outcomes showed that majority of the respondents 50 (68.5%) were holding the designation of librarians. The results demonstrated that majority

of the respondents 17 (23.3%) were working from 1-5 years or more than 20 years 16 (21.9%).

Table 2

Demographic information (N=73)

Variable	Levels	Frequency	Percentage
Gender	Male	46	63.0
	Female	27	37.0
Qualification	BS/MLIS/MLS	70	95.9
	M.Phil	02	2.7
	PhD	1	1.4
Age	21-25	1	1.4
	26-30	17	23.3
	31-35	23	31.5
	36-40	13	17.8
	Above 40	19	26.0
Designation	Chief Librarian	3	4.1
	Senior Librarian	17	23.3
	Librarian	50	68.5
	Assistant Librarian	03	4.1
Professional Working Experience	1-5	17	23.3
	6-10	11	15.1
	11-15	16	21.9
	16-20	13	17.8
	Above 20	16	21.9

Reasons of Koha and SLiMS Adoption

The outcomes (Table 3) revealed that six statements regarding Koha' software got mean score > 4.00 and remaining statements got mean score > 3.00. The findings showed that majority of the respondents were agreed that their libraries adopted Koha due to Koha provides search facility for copy cataloguing through Z39.50 (Mean=4.28, SD=0.98), Koha provides multilingual support (Mean=4.23, SD=0.94), Popularity of Koha among profession's community (Mean=4.21, SD=0.96), Koha provides MARC21 standard for cataloguing (Mean=4.15, SD=1.00) and provision of discovery features (Mean=4.13, SD=0.99).

On the other hand, the findings showed that ten statements regarding SLiMS' software got mean score > 4.00 and remaining five statements got mean score > 3.00. The outcomes showed that majority of the respondents were agreed that their libraries adopted SLiMS due to availability of Web OPAC (Mean=4.60, SD=0.77), popularity of SLiMS among profession's community (Mean=4.45, SD=0.88), SLiMS provides MARC21 standard for cataloguing (Mean=4.45, SD=0.88), SLiMS provides multilingual support (Mean=4.40, SD=0.77), and SLiMS provides search facility for copy cataloguing through Z39.50 (Mean=4.34, SD=0.96).

Table 3

Reasons to adoption of Koha and SLiMS (N=73)

Sr. No	Reasons of Koha adoption (N=38)	Mean	Std. Dev	Reasons of SLiMS adoption (N=35)	Mean	Std. Dev
i)	Koha provides search facility for copy cataloguing through Z39.50	4.28	0.98	Availability of Web OPAC	4.60	0.77
ii)	Koha provides multilingual support	4.23	0.94	Popularity of SLiMS among profession's community	4.45	0.88
iii)	Popularity of Koha among profession's community	4.21	0.96	SLiMS provides MARC21 standard for cataloguing	4.45	0.88
iv)	Koha provides MARC21 standard for cataloguing	4.15	1.00	SLiMS provides multilingual support	4.40	0.77
v)	Provision of discovery features	4.13	0.99	SLiMS provides search facility for copy cataloguing through Z39.50	4.34	0.96
vi)	Availability of web OPAC	4.13	0.96	Availability of Library 2.0 features	4.28	0.95
vii)	Availability of Library 2.0 features	3.92	1.09	Hosting and support services for SLiMS is easily available	4.17	0.92

viii)	Provision of desirable features/functionality	3.84	1.30	Provision of desirable features/functionality	4.17	0.95
ix)	Insufficient features and the non-availability of library standards in legacy system	3.57	1.05	Free availability of SLiMS	4.14	1.21
x)	Hosting and support services for Koha is easily available	3.55	1.36	Provision of discovery features	4.08	1.01
xi)	Easy installation process on Linux operating system	3.52	1.38	Insufficient features and the non-availability of library standards in legacy system	3.91	1.14
xii)	Free availability of Koha	3.50	1.17	Organization's dissatisfaction with proprietary systems	3.85	1.16
xiii)	Economical cost of implementation and maintenance	3.50	1.39	Easy installation process on Linux operating system	3.82	1.48
xiv)	Organization's dissatisfaction with proprietary systems	3.39	1.19	Economical cost of implementation and maintenance	3.80	1.27
xv)	High costs of legacy systems	3.15	1.19	High costs of legacy systems	3.37	1.30

Problems Faced in Implementation of Koha and SLiMS

The respondents were asked about problems which were faced during the implementation of Koha or SLiMS software. The findings (Table 4) revealed that majority of the respondents were agreed that they faced problems during the implementation of Koha included shortage of skilled manpower to install and maintain the software (Mean=4.42, SD=0.85), shortage of finance for hardware requirement (Mean=4.28, SD=0.95), up gradation of Koha versions (Mean=4.23, SD=0.97), non-availability of active voluntary support/training (Mean=4.18, SD=0.89), and customization and development of software (Mean=4.13, SD=1.11).

On the other side, the outcomes demonstrated that majority of the respondents responded that requirement of highly networked and integrated environment (Mean=4.14, SD=0.91), up gradation of SLiMS versions (Mean=4.14, SD=1.03), support issues of UTF-8 languages (Mean=4.08, SD=1.12), shortage of finance for hardware requirement (Mean=4.05, SD=1.18), and customization and development of software (Mean=4.02, SD=0.98) were the major problems in the implementation of SLiMS software.

Table 4

Problems faced in the implementation of Koha and SLiMS (N=73)

Sr. No	Problems faced in Koha implementation (N=38)	Mean	Std. Dev	Problems faced in SLiMS implementation (N=35)	Mean	Std. Dev
i)	Shortage of skilled manpower to install and maintain the software	4.42	0.85	Requirement of highly networked and integrated environment	4.14	0.91
ii)	Shortage of finance for hardware requirement	4.28	0.95	Up gradation of SLiMS versions	4.14	1.03
iii)	Up gradation of Koha versions	4.23	0.97	Support issues of UTF-8 languages	4.08	1.12
iv)	Non availability of Active Voluntary support/Training	4.18	0.89	Shortage of finance for hardware requirement	4.05	1.18
v)	Customization and development of software	4.13	1.11	Customization and development of software	4.02	0.98
vi)	Network configuration	4.10	1.13	Need good Internet access to provide optimum benefits	4.00	1.08
vii)	Requirement of highly networked and integrated environment	4.10	1.00	Shortage of skilled manpower to install and maintain the software	3.85	1.33
viii)	Need good Internet access to provide optimum benefits	4.07	1.04	Non availability of Active Voluntary support/Training	3.85	1.19

ix)	Support issues of UTF-8 languages	4.05	1.29	Lack of knowledge about operating system (Linux etc)	3.65	1.25
x)	Complex procedure of data migration from legacy system	3.94	1.35	Lack of motivation from the management/ authority	3.42	1.06
xi)	Complex installation procedure of Koha	3.78	1.04	Network configuration	3.40	1.35
xii)	Lack of vendor's support	3.63	0.99	Lack of technical skills	3.37	1.19
xiii)	Approval from the organization	3.60	0.97	Approval from the organization	3.34	0.90
xiv)	Lack of motivation from the management/ authority	3.57	0.97	Complex installation procedure of SLiMS	3.14	1.55
xv)	Lack of knowledge about operating system (Linux etc)	3.57	1.22	Complex procedure of data migration from legacy system	3.08	1.44
xvi)	Lack of technical skills	3.36	1.26	Lack of vendor's support	3.05	1.18

Conclusion:

The core aim of this study was to assess Koha and SLiMS features in college libraries of Sindh. The present study consisted of 02 objectives (a) to discover the reasons of adoption of SLiMS and Koha ILS, (b) to recognize the challenges during the implementations of SLiMS and Koha ILS. The present study found that libraries adopted Koha because Koha provides search facility for copy cataloguing through Z39.50, multilingual support, MARC21 standard for cataloguing and provision of discovery features. On the other side, this study discovered that libraries adopted SLiMS due to availability of Web OPAC, popularity of SLiMS among profession's community, SLiMS provides MARC21 standard for cataloguing, SLiMS provides multilingual support, and SLiMS provides search facility for copy cataloguing through Z39.50.

Current study highlighted that library professionals faced problems during the implementation of Koha which included shortage of skilled manpower to install and maintain the software, shortage of finance for hardware requirement, up gradation of Koha versions, non-availability of active voluntary support/training, and customization and development of software. Requirement of highly networked and integrated environment, up gradation of SLiMS versions, support issues of UTF-8 languages, shortage of finance for hardware requirement, and customization and development of software were the major problems in the implementation of SLiMS software.

Following recommendations are furnished in light of the findings of the study and discussion:

- The schools of library and information/management science should arrange some learning classes for their students on Koha and SLiMS.
- The experts of the Koha and SLiMS should should arrange tutorials and share it with other colleagues through Youtube, Facebook etc.
- Librarian who want to learn about Koha and SLiMS should consult manual of the software.

- Libraries should install new version of Koha and SLiMS so that they can get benefit with new added features.
- Librarians should participate in workshops of Koha and SLiMS to get expertise in software.

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