ADOPTION AND FUNCTIONALITY OF KOHA INTEGRATED LIBRARY MANAGEMENT SYSTEM IN CENTRALLY FUNDED TECHNICAL INSTITUTIONS IN INDIA : A STUDY

Abstract

Submitted to the
Babasaheb Bhimrao Ambedkar University, Lucknow

in Fulfillment of Requirement for the Award of Degree of

Doctor of Philosophy

in Library and Information Science

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2022

Abstract

Introduction

The library is a significant community part and essential to any academic institution. The aim is to provide the correct information quickly to the users. During the information age, data is rapidly generated in seconds. To manage the information explosion, libraries are adopting new technology.

In 1960 no commercial software; therefore, computer scientists and researchers had to rely on freely available, publicly shared software code to complete their work. In the 1970s, hardware and operating system software were sold separately. Software businesses started to regulate source code in the 1980s. The topic of discussion and consideration was the limitation of access to the source code. The Free Software Foundation and Richard Stallman's fight for software freedom brought about a significant shift in the software industry in 1985. "Free software," as defined by Stallman, is software that guarantees the freedom to run, study, disseminate copies of, and distribute modified versions of four fundamental freedoms. Any free software must have access to the source code. The word "free" may not always mean cost-free. The earliest example of free software was Stallman's GNU operating system.

Eric Raymond first used the phrase "open-source software" (OSS) in 1997 to help promote and give the movement a good face in the business community (O'Neill, 2012). OSS is software whose source code is made public and available to anyone, permitting anyone to copy, change, and redistribute the source code without paying royalties or other costs, depending on the specific type of rights provided with the software. (Forge, 2006). describes the advantages and disadvantages of adopting

open-source software for document management (DM). The author provides attention to the fact that a community of volunteer developers builds and maintains open-source software. Employing such software in data.

Statement of the Problem

The problem of the study is "**ADOPTION AND FUNCTIONALITY OF KOHA INTEGRATED LIBRARY MANAGEMENT SYSTEM IN CENTRALLY FUNDED TECHNICAL INSTITUTION IN INDIA : A STUDY**"

Definition of key Concepts

- **Adoption:** means transferring old systems to a new system in the institute. In this study, adoption is related to Koha software's integrated library management system.
- **Functionality:** means how it functions, including various modules.
- **Koha:** Koha is the first open-source accepted worldwide by all libraries. This study focuses mainly on Koha ILMS, its adoption, and its functionality in India's centrally funded technical institution.
- **Integrated library management system:** an electronic program that helps librarians and users to circulate and catalog items, manage patronage activity, track item movement, and interact with other libraries or institutions ' databases. An integrated library management system is designed to increase the output and efficiency of a library and improve access to the resources of its employers by automating the otherwise manually implemented processes. The study is related to the adoption and functionality of the Koha integrated library management system.

- **Centrally funded:** Centrally funded means that those institutions are supported by the government of the Central Government of India. This study is conducted only in centrally funded technical institutes that adopt Koha ILMS.

- **Technical Institutes:** Institutes that provide science and technology courses, management science, etc. In this study, the researcher only took technical institutes such as IIT, IIM, NIT, IIIT, IISER, etc.

Outline of the Thesis

The study is presented in Five chapters

Chapter 1: Introduction

This chapter deals with the introduction of research work. it includes the importance of the study objective of the study, hypotheses of the study, definition of the important terms, research methodology, etc.

Chapter2: Literature Review

This chapter presents a detailed description of the review carried out with the help of previously published literature in the context of the aim of the study. The research gaps were identified based on the reviewed literature and were used for synthesizing and gaining open-source software Koha and uses.

Chapter 3: Koha: Profile

This chapter describes the Koha software's introduction, history, architecture, and modules.

Chapter 4: Data Analysis and Interpretation

The chapter focuses on the conclusions drawn from a statistical analysis of the data gathered. A valid and trustworthy research tool was used to collect the data, and the following survey method was used. The information in this chapter is based on data analysis and interpretation of information provided by librarians of centrally funded technical institutes in India.

Chapter 5: Findings, Suggestions and Conclusion

This chapter discusses the conclusions drawn after thorough statistical analysis and data interpretation. This chapter also includes the recommendation.

Objectives of the Study

Every study has its own particular and relevant objective. Without defining the goals, a study conducted by a researcher is no meaning. There are objectives of the present study as that:

1. To know the reasons for the adoption of Koha
2. To know the Qualities have been seen by the institutions before adopting Koha
3. To investigate the challenges that libraries face when adopting Koha.
4. To find the steps taken prior to data migration from their previous library system to Koha.
5. To determine whether fully or partially Koha modules are operational.
6. To determine the level of satisfaction with Koha among library professionals

Hypotheses of the Study

After defining the study's objectives, the researcher drew a tentative statement called hypotheses for the present study. A working hypothesis or hypothesis is tested logically with the help of various hypothesis testing methods. Hypothesis provides a focal point for any research. The present study is proposed to test the following hypotheses mentioned below. These are:

1. **H1** Libraries of centrally funded technical institutions in India have had a positive experience with Koha ILMS.
2. **H2**During the Koha ILMS implementation, libraries at Indian centrally funded technical institutes are not encountering any problems.
3. **H3** The libraries of centrally funded technical institutes in India make full use of every module of Koha ILMS.

Research Methodology

Research is a method of acquiring knowledge. Research helps to bring new knowledge to the existing knowledge and provides benefits to the needed public.

In any kind of conducting research, research methodology is a backbone of a complete process. Research methodology is not a single term it is a cluster of many logical steps. A research methodology is a method for systematically solving a research problem. It comprises identifying and selecting the problem, reviewing existing literature; drafting the hypotheses; drawing up the research design; data collection and analysis using statistical methods, and finally, reporting the findings and conclusion.

Population and sample size

A researcher was selected from technical institutes under the Ministry of Human Resource Development (Now Ministry of Education),which implemented Koha in their library. 83 institutions, but only 35 institutions have implemented library automation software, i.e., Koha. A total of 35 institutions are a sample size of a target population, but only 32 institutions have given data about the adoption and functionality of Koha. The rest of the three institutes do not provideany kind of data. There are following 35 institutions listed below:

S. No	Name of Institute	Questionnaire Distributed Response received
1	Indian Institute of Technology, Bombay	Yes
2	Indian Institute of Technology, Kanpur	Yes
3	Indian Institute of Technology, Jammu	Yes
4	Indian Institute of Technology, Indore	Yes
5	Indian Institute of Technology, Mandi	Yes
6	Indian Institute of Technology, Palakkad	Yes
7	Indian Institute of Technology, Bhili	Yes
8	Indian Institute of Technology, Bhubaneshwar	Yes
9	Indian Institute of Technology, Gandhinagar	Yes
10	Indian Institute of Technology, Tirupati	Yes
11	Indian Institute of Management, Sambalpur	Yes
12	Indian Institute of Management, Visakhapatnam	Yes
13	Indian Institute of Management, Jammu	Yes
14	Indian Institute of Management, Udaipur	Yes

15	Indian Institute of Management, Kozhikode	Yes
16	Indian Institute of Management, Ahmedabad	Yes
17	Indian Institute of Management, Bodhgaya	No
18	National Institute of Technology, Kurukshetra	Yes
19	National Institute of Technology, Meghalaya	Yes
20	National Institute of Technology, Hamirpur	Yes
21	National Institute of Technology, Silchar	Yes
22	National Institute of Technology, Surathkal	Yes
23	National Institute of Technology, Srinagar	Yes
24	National Institute of Technology, Rourkela	Yes
25	National Institute of Technology, Jaipur	No
26	Indian Institute of Science Education and Research, Mohali	Yes
27	Indian Institute of Science Education and Research, Bhopal	Yes
28	Indian Institute of Science Education and Research, Tirupati	Yes
29	Indian Institute of Science Education and Research, Berhampur	Yes
30	Indian Institute of Information Technology Design and Manufacturing, Kurnool	Yes
31	Indian Institute of Information Technology, Allahabad	Yes
32	Indian Institute of Information Technology Design and Manufacturing, Kancheepuram	Yes
33	School of Planning and Architecture Bhopal	Yes
34	National Institute of Technical Teachers Training and Research, Bhopal	Yes
35	National Institute of Technical Teachers Training and Research, Chennai	No

Scope and limitation

- The study took only those centrally funded technical institutions using Koha software. Here it is mentioned that all the centrally funded technical institutes which do not haveKoha software are excluded from the study.
- This study aims to motivate other libraries and library professionals to provide excellent library services with the advanced features of Koha. It also leads to improving the confidence and courage among library professionals to implement the advanced open-source software Koha and to create an efficient digital environment in new-generation libraries.

Data collection tool

A questionnaire was the primary tool for data collection. The researcher prepared a google form of a questionnaire, and he included both types of open-ended and closed-ended questions in the questionnaire. The researchers got the questionnaire filled out by only the librarian or In-charge of the library. The questionnaire was divided into two parts. Part 1 consists of general questions, and part 2 consists of questions related to the study. In part 2 researcher framed the questions according to the Koha modules sequence.

Data analysis and Citation style

For analysing the data, the researcher first extracted all the data from the google form of a questionnaire in relatable headings and drew tables and graphs in MS Excel. All the tables and graphs are interpreted in a meaningful way. The researcher provided a list of work references at the end of every chapter and a bibliography at the end of the thesis for citation style, Zotero, a reference management software used for creating

references and bibliographies in the 7th edition of APA (American Psychological Association) style.

Introduction: Koha

This study investigates the factors that encourage the libraries of the Technical Institutes of India to adopt the Koha library management system.

Koha is the first integrated library system (ILS) of its kind and is utilized by the public, university, and specialty libraries worldwide. A supportive global network of libraries and users who work together to accomplish its technological goals and objectives directs its growth and development. The word "gift" or "donation" in Mori, which became the name of the ILS, is "Koha.". The ILS is a web-based tool for libraries developed on a new platform. Koha uses a SQL database as its backend and stores cataloguing data in MARC format that is available via the Z39.50 protocol (MySql is recommended). Koha is a cutting-edge web-based integrated library system with improved content and substance, dynamic navigation, keyword search functionality, user-contributed updates, and Rich Site Summary (RSS) feeds, making it the only integrated library system in the world. Currently, Koha maintains webpages in four different languages: French, Chinese, Italian, and Spanish.

FINDINGS

- From the study results, it is evident that most of the libraries had taken permission from a higher authority, followed by 65.63% of libraries, had consulted with an expert, 50% of libraries provided training to the staff, 50% of libraries, reviewed the relevant literature, 59.38% libraries, demonstrated the software, 40.63% libraries, analysed the total expenditure, 34.38%

libraries, sent a proposal to the vendors and 12.50% had taken other steps before software implementation.

- From the study results, it is evident that most of the libraries see user-friendliness, followed by adaptability, services, security, cost, proper documentation, reputation, and other software qualities.
- From the study results, it is evident that most of the libraries shifted from Libsys, and others sifted from Soul, Libsuite, Virtua, and other libraries' software.
- In the study results, it is evident that the first Koha adoption was done in 2010 by IIITDMKU-Kancheepuram; in the next year, 2011, only IITMD-Mandi adopted Koha, and 2 libraries, adopted Koha in the year 2012. No adoption was seen in the next two years, i.e., 2013 and 2014. Furthermore, out of 32 libraries, 4 libraries adopted Koha in the year 2015, the majority 9 libraries adopted Koha in the year 2016, followed by 6 libraries adopted Koha in 2017, 6 libraries adopted Koha in 2018, 2 libraries adopted Koha in 2019, and in the year 2021 NITH-Hamirpur adopted Koha software.
- In the view of the study results, it is evident that most of the respondents have answered that they agree with Koha software as it is open source, available with source code, price wise affordable, easily available, it is easy to use, easy install, error-free, compatible with hardware, Suitable for library housekeeping operations, Web compatible.
- They also agreed that Koha is Multilingual, provides a Backup facility, has a Graphical interface, Data security, provides an Updation of modules, a Customization facility, and a User-friendly environment.

- Other reasons for choosing Koha answered by the respondents were Scalability, Desirable features & functions, Support to RFID, providing alternatives to proprietary software, Software running in multi–Operating Systems, Secure and reliability, and Freedom from maintenance and licensing fee.
- In the view of the study results, it is evident that only 62.5% of libraries had migrated their data to Koha.
- From the study results, it is evident that most of the libraries had taken the backup of the data before executing, followed by proper data testing. Some libraries stuck to the strategy, and few took other methods.
- From the study results, it is evident that most of the libraries had issues with data quality and data mismatch, followed by difficulty with data loss in data migration, some libraries had problems in data migration, like the difficult format of data, and some libraries faced the challenge of duplication in data migration.
- From the study results, it is evident that most libraries had a fully functional acquisition module while others had a partially functioning acquisition module.
- From the study results, it is evident that all libraries had a fully functional circulation module.
- From the study results, it is evident that most libraries had a fully functional cataloguing module, while few reported a partially functioning cataloguing module.

- From the study results, it is evident that most libraries had a fully functional serial control module, while others reported a partially functioning serial control module.
- From the study results, it is evident that most libraries had a fully functional OPAC module, while few reported a partially functioning OPAC module.
- From the study results, it is evident that most libraries had a fully functional OPAC module, while few reported a partially functioning OPAC module.
- On the basis of study results, the study reveals the fact that the majority of library professionals prefer module customization as it will be more helpful for them to use according to their requirements.
- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of the acquisition module, such as approval, Receipt of orders, invoice process, placing orders, order follow-up, online query process, reports, and order initiations functions.
- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of the circulation module, such as check-out, check-in, reservation, fines and fees, reports, and patron records function.
- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of the serial module, such as subscription, subscription renewal, subscription extension, invoice process, receiving issues, customized claims monitoring, and report function.
- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of the Catalogue module, such as data entry, authority control, Record editing, Record Creation,

Copy Catalogue, Import Bibliographical Record, reports, OAI/PMH and SRU/W function.

- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of OPAC module such as basic search, advanced search, MARC display, ISBD display, AACR2 display, Book Jacket display, Download/ Save records, print records, patron login, Patron's suggestion, RSS delivery of search result, share in social networking sites, google books preview and Link to Amazon books function.
- On the basis of study results, the study reveals the fact that the majority of library professionals were satisfied with the functions of tool modules such as notice, slips, patron cards, batch item, record import, task schedular, and barcode generate function.
- On the basis of study results, the study reveals the fact that the majority of studied libraries faced no problems and few had issues while using Koha.
- On the basis of study results, the study reveals that the majority of the total 32 libraries have faced problems like inadequate software training tools and unskilled manpower for its use. Other factors are power disruption, proper documentation, data integrity, data loss, slow internet, and lack of support from higher authorities.
- On the basis of study results, the study reveals the fact that after installation, most of the library professionals found various aspects of Koha ILMS like technical aspects, Database Management, statistical reports, document management, user response, and other factors very good.

- On the basis of study results, the study reveals that most of the libraries had taken training programs followed by workshops, participated in the seminar, attended conferences, and had gone through other promotion activities.
- From the study results, it is evident that most libraries scored Koha ILMS as excellent and very good.

SUGGESTIONS

- Koha Up-gradation needs to match with earlier customization.
- Koha developer makes an Online payment gateway other than PayPal.
- Koha community should provide Complete automation of the acquisition and serial module in the Indian context.
- It should be customized to incorporate more added features for complete library automation in the Indian context.
- Libraries that successfully migrated their data from other library systems to Koha will share their experience with other libraries, making it easy for other libraries,.
- Before adopting Koha, libraries should provide proper training to their staff.
- Library professionals should know about the available online learning platforms for Koha training, like water solution, Koha community, Spoken tutorial, and Swayam Portal. to the staff.
- It is a well-known open-source ILMS that has developed significantly in both functionality and expertise since its first version was made.
- Koha community should do more work on the modules like Serial and Acquisition in the context of India.

- Koha is the most prominent open-source library management system in use nowadays in libraries. it should be a better option for other libraries in India.
- Higher authorities of technical Libraries should fill all the section posts of the libraries for the betterment of the library.

FURTHER RESEARCH

- Comparative study of Koha with other commercial Integrated library management systems.
- Comparative study of Koha with another Open-source Integrated library management system.
- User satisfaction with web-OPAC of Koha Integrated library management systems.
- Case study of the acquisition and serial module of Koha Integrated library management systems.

CONCLUSION

Very few concepts in life can change the course of human life as the invention of computers. It is deemed true that computers have revolutionized our society and helped us scale greater heights in the evolution cycle. Computers have penetrated so deep into the common man's life as it has never in the past years. Today, computers have become an integral part of academic life. It is, thus, very prominent in any educational institution and the utility of computers is of immense value. Library management systems are also derived from the computer software.

Now, in the present study, an attempt has been made to identify the factors that encourage the libraries of the Technical institutes of India to adopt the Koha library

management system. This shall greatly help the library staff in rendering the most valuable resources of the library in an effective and viable manner and helps the user to adjudicate the best and most resourceful means to procure the issue of their need. No software package can meet all the requirements of a given library system. Inevitably, some compromises will be needed in workflows. Customization takes a lot of time, and by doing that, other problems could arise. Therefore, while evaluating the library software, it is important to prioritize the requirements and make sure that the chosen software meets most, if not all the high priority requirements.