

Research Article

Use of Library Software in Constituent Campuses Libraries of Tribhuvan University

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Abstract

The study emphasizes how difficult it is for the campus libraries of Tribhuvan University (TU) to manage its software systems, mainly because there is no standardized software and little stakeholder knowledge. These obstacles reduce the effectiveness of libraries overall and make data less accessible. The report recommends investing in standardized software solutions, raising executive and librarian awareness, and improving technology infrastructure to enable improved data management practices as ways to address these problems. Using a thorough research methodology that includes surveys and on-site observations at 45 university libraries, the study emphasizes how urgently modern technology, an online presence, and effective resource management are needed. Even if the assessed libraries have different achievements, similar problems such a lack of staff and poor IT assistance still exist and have a big influence on operational effectiveness. In order to increase library performance, the study highlights the significance of putting thorough training initiatives, staffing alterations, and strategic technology expenditures into practice. Beyond TU, the study's results provide important insights into the dynamics of information management in academic institutions. It offers doable suggestions for improving library operations, such as endorsing open-source software, growing book collections, and customizing services to meet campus requirements. To better understand the obstacles to Information and Communication Technology (ICT) adoption and offer targeted solutions for enhancing library functionality in academic contexts, more research is necessary.

Keywords

Automation, Integrated System, Digital Library, Academic Library

1. Introduction

A library is a structured repository of information resources that are made available to individuals, either in physical or digital form. Historically, access to library resources was primarily limited to the physical library space, but with the advancement of technology, access has transitioned to online platforms [2]. Libraries require modern methodologies to adapt to their rapidly evolving nature. Integrating contemporary approaches is essential for swift information retrieval,

efficient dissemination, and improved user experiences [6]. Library Management System integrates modules for book and user maintenance, enabling precise tracking of library users and book descriptions. It eliminates the risk of losing records and includes a reporting module for generating diverse reports, empowering librarians to efficiently manage the library. Librarians utilize a computerized system for efficient library management, facilitating tasks such as book lending, returns,

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acquisitions, and student registrations. This system enhances organization and accessibility of information for library users [17].

Library management is a specialized field that addresses challenges like intellectual freedom, anti-censorship efforts, and fundraising. It combines traditional management with preserving access to information and securing resources, akin to managing nonprofit entities [14]. The Library Management System is a software application designed to represent and manage the operations of a library, typically catering to libraries of small to medium size. Libraries evolve with technology, becoming modern resource centers catering to diverse user needs. Integration of new technologies enhances accessibility and expands opportunities for knowledge acquisition, transforming traditional libraries into dynamic, automated, and digitalized hubs [10]. The Library Management System is a software solution designed to oversee and regulate the operations and activities within a library [17]. Before the advent of library management systems, libraries relied on manual processes for tasks like ordering materials, cataloging, and circulation. The introduction of library management systems revolutionized these processes by automating them through the use of relational databases, software, and user interfaces. These systems streamline resource management and improve operational efficiency by incorporating modules for acquisitions, cataloging, circulation, serials, and online public access catalogs (OPACs).

The concept of modern library services has only emerged in Nepal relatively recently [1]. During that period, while the western world embraced the rapid dissemination of printed books and documents, Nepali librarians such as Pandit Kedar Nath, Khadga Ram Joshi, and Megh Nath Rimal diligently focused on copying and preserving manuscripts, as the British Museum in the western world thrived and offered vibrant library services. The proliferation of library software companies and their advertising have led to confusion among libraries. Experts advise convening a selection committee to assess options based on criteria such as flexibility, security, affordability, and compatibility with the latest technology. Evaluating software becomes crucial in libraries to ensure user-friendliness, efficiency, and cost-effectiveness, providing valuable guidelines for Nepalese librarians. Advanced technologies are essential in libraries to control and disseminate information effectively, preventing obsolescence and meeting user needs. Computers have revolutionized library services, assisting librarians through automation. Software, comprising programs, executes commands to operate hardware components [15].

Software is crucial for a computer's effectiveness, akin to a brain for a person or books and librarians for a library. Thus, selecting appropriate software is paramount for optimal performance and desired outcomes. The author stresses the importance of a comprehensive overview of software for managing library operations and facilitating information retrieval services [7]. Software selection for libraries entails thorough

consideration by a selection committee, prioritizing factors like flexibility, security, cost-effectiveness, and user-friendliness. An evaluation study offers valuable guidance for Nepalese librarians, ensuring the adoption of efficient, user-friendly software aligned with the latest technology. The lack of uniform information management software among TU affiliated campuses has hindered timely and easy access to library data. A study utilizing structured questionnaires and data analysis aims to identify solutions to improve information management in campus libraries, addressing issues in library software and facilitating resource sharing.

Established in 1959 A.D., Tribhuvan University Library merged with the Central Library in 1961 A.D. to form Tribhuvan University Central Library (TUCL). With five institutes, four faculties, sixty-two (62) constituent campuses, forty (40) central departments, and one thousand sixty-two (1062) affiliated campuses, TU is one of the world's largest universities, catering to diverse programs and a large student body. Each campus has its own library, including academic and special libraries under institutes, serving students, teachers, and staff members. Additionally, TU houses four research centers to support scholarly activities. Nepal lacks a centralized national body to regulate libraries, leading to inconsistent information services and limited access to legal-based library services for citizens. Roles and responsibilities related to information management remain undefined, with no clear policies or programs for effective library service implementation by TU or the Nepalese Government [5]. Integrating computer software packages and ICT is essential for universities to deliver information effectively, allowing libraries to offer access to their collections and catalogs of other libraries, thus expanding available resources for the community [13]. TU faces challenges in ensuring reliable data availability due to varied software choices among campuses and a shortage of skilled library officers. A study aims to identify and evaluate software through a questionnaire survey, seeking a solution for uniformity, effectiveness, efficiency, and user-friendliness.

The study addresses challenges in library management software usage across 35 TU constituent campus libraries due to a lack of uniformity and limited awareness. It aims to identify and resolve software-related issues to enhance library operations' efficiency. By investigating problems and potential solutions, the research offers valuable insights into Nepal's library management system landscape. The study explores inquiries regarding software challenges and seeks to propose effective solutions. It sheds light on the types of software utilized in TU libraries and incorporates electronic sources for comprehensive analysis. The primary objective is to assess software-associated problems and suggest remedies to improve library management in the constituent campuses of TU.

Research Questions

The research was conducted with a focus on addressing the following research inquiries:

- 1) What are the problems faced using library management software in TU constituent campus libraries?
- 2) How could the problems be solved library management software?

2. Literature Review

The literature review provides a comprehensive overview of software, library management software, automation software, and digital library software, considering national and international perspectives. Limited literature exists on software status in TU campus libraries, with abundant foreign literature on digitization in universities but scarce research specific to TU libraries. The literature review chapter extensively covers digital library initiatives and the global landscape of automation and digitization, with a focus on efforts in public and private university libraries nationally, regionally, and internationally. It compiles literature on automation, digitization, and related concepts from diverse perspectives, including insights from technologically advanced countries. An array of keywords was used in the search process to ensure comprehensive coverage of relevant literature. The chapter aims to establish a framework for assessing the current state of library automation and digitization in university campus libraries by synthesizing valuable literature sources. Notably, pioneering open-source software projects like Koha have paved the way for advancements in library and information science technology, with initiatives like Greenstone, DSpace, and VuFind demonstrating continuous development and global adoption.

A comprehensive Integrated Library Management System (ILMS) is expected to cover key library operations including acquisitions, cataloging, circulation, administration, serials management, OPAC, interlibrary loan (ILL), and statistical reporting, ensuring seamless accessibility to individual sub-modules within these primary functional components [3]. Malwad said that in the article “*Selection Criteria for Library Automation Software*” This section explores diverse software packages for library maintenance, information storage, and retrieval, with variations in capabilities, pricing, and version updates. Careful selection of an appropriate software package is crucial for library automation, considering the institution's requirements, operating environment, budget, and user objectives [8]. Joint suggested in his article “*Evaluating library software and its fitness for purpose*” This paper examines established software evaluation models and adapts their principles to the unique needs of information retrieval and educational applications in libraries. It introduces a compre-

hensive software quality model covering functionality, reliability, usability, efficiency, maintainability, and portability [4].

Ramesh said that in this article “*Technical problems in University libraries on Automation-An overview*”. This paper emphasizes the importance of efficient technical services in libraries, exploring aspects like acquisition, cataloging, and circulation, and acknowledging the challenges posed by advancements in information technology for university libraries [12]. Minkova define that Open-source software refers to computer software that is accompanied by source code accessible under a license that grants users the freedom to examine, modify, and distribute the software without restrictions. Such software is commonly developed through collaborative and transparent efforts within a public domain [9]. Singh and Sanaman reported that Koha was first launched online in 2000 A.D. and many other open-source software (OSS) projects have since been developed for library and information science [16]. Greenstone, DSpace, and VuFind are among the most popular, with a large global user base and ongoing development based on shared experiences and ideas. Rahman explored in the discussion is DSpace, a platform dedicated to the management of digital repositories, catering to a diverse range of digital content including articles, books, theses, multimedia files, and bibliographic records. Notably, DSpace offers multilingual support to accommodate a wide array of languages [11]. This study identifies software used in TU constituent campus libraries through questionnaire data collection, analyzed qualitatively and quantitatively.

3. Methodology

This chapter outlines the research methods used to address library management software issues in TU Constituent Campus Libraries. It employed a survey research approach, collecting data via email questionnaires from librarians and heads of library sections across 62 campuses. A purposive sampling method targeted libraries using software. The researcher designed and distributed a questionnaire tailored to gather information on software usage and issues. Out of 62 distributed questionnaires, 35 were submitted and analyzed using Microsoft Excel, 17 were not installed any type of software and other 10 were did not respond. The analysis involved data collection, editing, coding, tabulation, and presentation of results through tables, graphs, and diagrams, leading to draw conclusions.

Discussion and Finding

Table 1. Availability of official email and website of the Campus (n=35).

Question	Responses	Number of Campuses	Percentage
Has Official Email	Yes	35	100%

Question	Responses	Number of Campuses	Percentage
Has Campus Website	No	0	0%
	Yes	32	91%
	No	3	9%
Grand Total		35	100%

Source: Online survey, 2022 A.D.

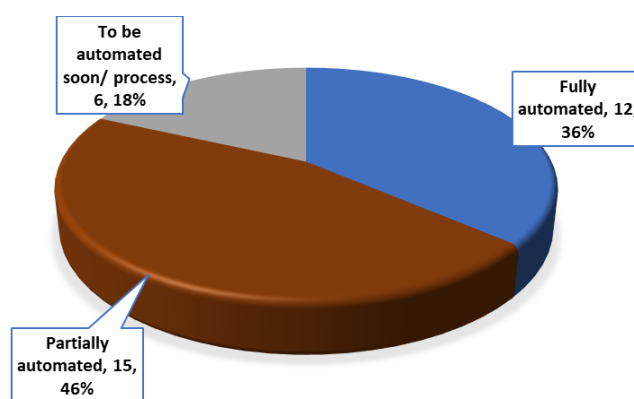
Table 2. Operating system on libraries.

Operating system on libraries	No. of Campuses library	In percentages
Windows	25	71%
Unix base Linux	2	6%
Macintosh	0	0%
Others	8	23%
Grand Total	35	100%

Source: Online survey, 2022 A.D.

Table 2 highlights that Windows dominates in campus library computers, comprising 71% of the sampled campuses. This underscores its popularity, likely attributed to its user-friendly interface and broad accessibility. Conversely, Unix-based systems, like Linux, are utilized by a smaller fraction (6%) of campuses, prized for their stability and flexibility, favored by tech-savvy users. Notably, 23% of campuses employ alternative operating systems, potentially including macOS or Chrome OS, reflecting diverse preferences.

Figure 1 shows data from 35 campuses on automation of library systems for managing digital resources. 6% have not automated, 43% are partially automated, 34% are fully automated, and 17% plan to automate soon. While there is a trend towards automation, there is still room for growth, and the reasons for the variation in automation rates are not provided. Further research is needed to better understand the factors that influence decisions on automation.



Source: Online survey, 2022 A.D.

Figure 1. Automation on libraries.

Table 3. Staff designation with number.

Staff of TU Constituents Campuses Library			
SN	Designation	No. of Staff	Percentage
1	Deputy librarian	6	2%
2	Library officer	17	6%
3	Section Officer	13	5%

Staff of TU Constituents Campuses Library			
SN	Designation	No. of Staff	Percentage
4	Head Assistant (Mu.Ka.Sa)	40	15%
5	Office Assistant	30	11%
6	Library office assistant	43	16%
7	Office account assistant	2	1%
8	Technician	6	2%
9	Mimographer	1	0%
10	Book Checker	22	8%
11	Audio Reader	1	0%
12	Audio Editor	1	0%
13	Lab assistant	1	0%
14	Volunteer	3	1%
15	Helper	87	32%
	Grand Total	273	100%

Source: Telephone survey, 2022 A.D.

TU Constituent Campuses Library has a diverse range of staff members with various job designations, but the majority are in support positions like "Helper", "Library office assistant", and "Office Assistant". The smaller percentages of higher-level positions may suggest a flatter organizational

structure. However, the data also shows a deficiency in professional staff, technicians, and IT personnel, which may hinder the library's smooth functioning. The insights provided by this data can aid in identifying areas for staffing adjustments and training.

Table 4. Different software knowledge base staff number.

Total library staff of TU Constituent Campuses Library	No. of Staffs	Percentage
General ICT knowledge	15	5%
Library Software Knowledge (e.g. KOHA, PMB, EMIS, etc.)	23	8%
Digital Library Software Knowledge (e.g. Greenstone, DSpace etc.)	6	2%
LIS background	29	11%
Computer Science background	25	9%
Others (Administrative Staff)	175	64%
Grand Total	273	100%

Source: Online survey, 2022 A.D.

In TU Constituent Campuses Library, a mere fraction of the 273 staff possesses ICT, library software, digital library software, LIS, or computer science expertise. The majority lack these skills, with 64% falling into the "Others" category.

This data illuminate's workforce strengths and gaps, aiding in pinpointing areas for enhancement or training. Yet, it's vital to acknowledge that staff skillsets may evolve over time, impacting this snapshot's relevance.

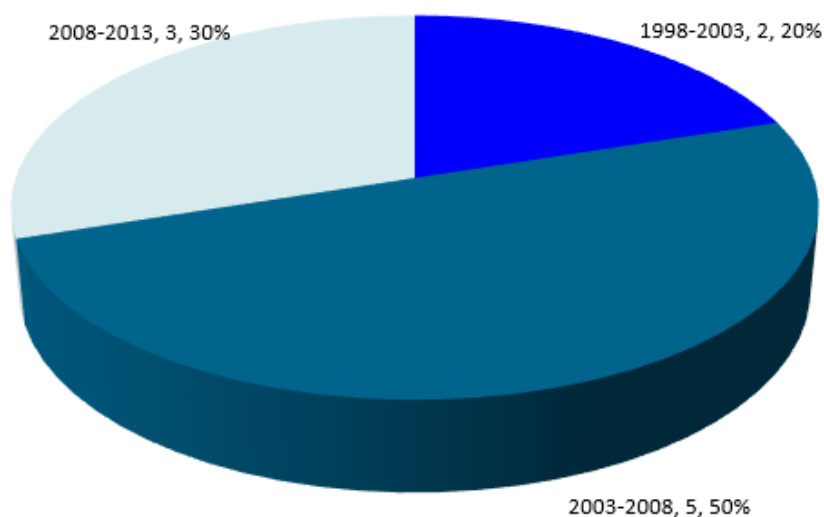
Table 5. ICT introduced on libraries.

ICT Introduced on libraries	No. of Campuses library	In percentages
1978-1983	1	3%
1983-1988	0	0%
1988-1993	0	0%
1993-1998	1	3%
1998-2003	1	3%
2003-2008	5	14%
2008-2013	4	11%
2013-2018	11	32%
After 2018	8	23%
Not introduced till now	4	11%
Grand Total	35	100%

Source: Online survey, 2022 A.D.

Among the surveyed campuses, 11% reported no introduction of ICT in their libraries. For those who have, the majority (32%) implemented it between 2013-2018 with 23% adopting it after 2018. Merely 14% initiated ICT between 2003-2008, while 11% did so between 2008-2013. Notably,

no introductions occurred before 1978 or between 1983-1988 and 1993-1998, indicating a recent trend in ICT adoption within Nepali libraries. However, this data's generalizability is limited due to its sample size.

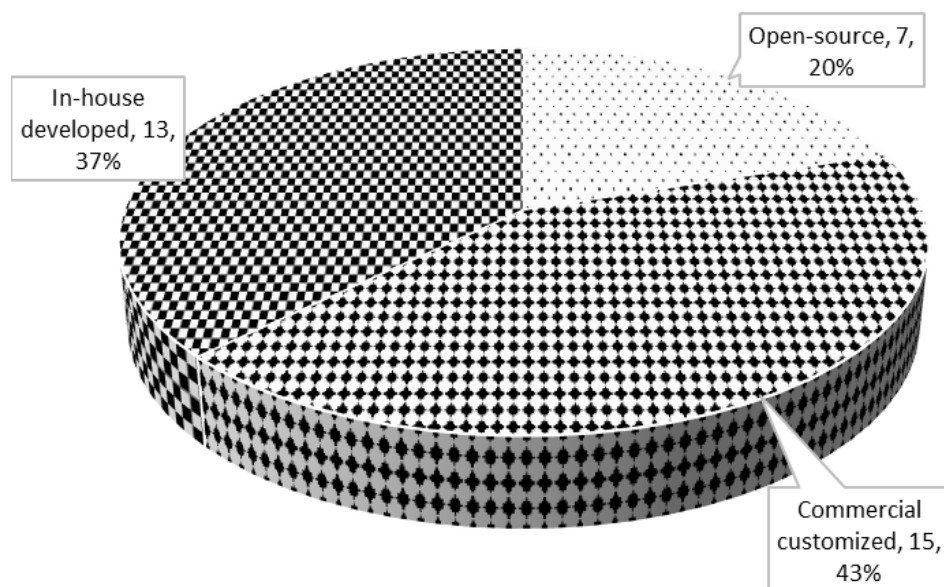


Source: Online survey, 2022 A.D.

Figure 2. Automation introduced on libraries.

The data shows that library automation in Nepal was introduced gradually, with 20% of respondents reporting adoption during 1998-2003, followed by a significant increase to 50% in 2003-2008, marking the peak period of automation. However, adoption slightly declined to 30% in 2008-2013,

indicating a slowdown. This trend highlights that while the early 2000s were crucial for technological advancement in libraries; sustained growth was hindered by challenges such as limited resources, trained manpower, and infrastructural support.



source: online survey, 2022 a.d.

Figure 3. Types of software being used on libraries.

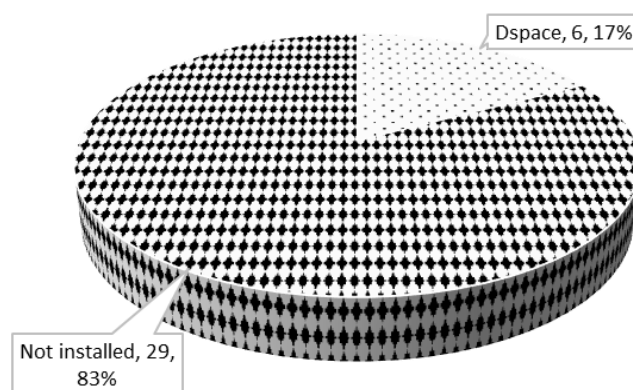
Figure 3 presents data from a sample of 35 campuses regarding the software types utilized in their campus libraries. Out of these, 20% (7 campuses) employ open-source software, characterized by freely available source code for modification and distribution. Additionally, 43% (15 campuses) utilize commercial customized software, developed and sold by companies for specific purposes, adaptable to user needs. Finally, 37% (13 campuses) utilize in-house developed software, crafted either by the library's IT department or contracted software developers, tailored to library requirements.

Out of the 35 surveyed campuses, Mitra ERP was the most installed library software (49%), followed by Mumolas (17%) and Koha (28%). Only one campus each had Cosmos and E-library installed. Further research is needed to understand the reasons behind these choices and the effectiveness of these software systems.

Table 6. Used and installed software.

Used and installed software	No. of respondents/ campuses	Percentages
Koha	10	28%
Cosmos	1	3%
Mumolas	6	17%
E-Library	1	3%
Mitra Enterprise Resource Planning (ERP)	17	49%
Grand Total	35	100%

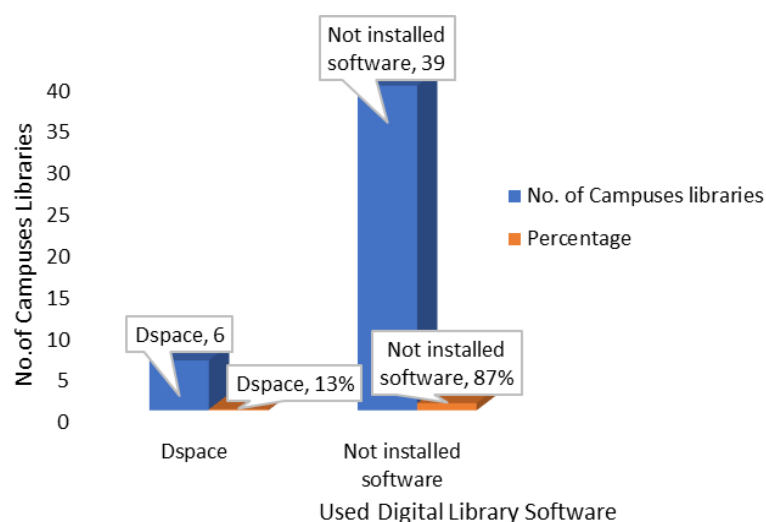
Source: Online survey, 2022 A.D.



Source: Online survey, 2022 A.D.

Figure 4. Installed digital library software.

The data provided shows the installation status of digital library software, specifically DSpace, in a sample of 35 campuses. Out of the 35 campuses, 29 (83%) have not installed any digital software, while DSpace has been installed in 6 (17%) of the campuses.



Source: Online survey

Figure 5. Used digital library software.

The data shows that just 13% of surveyed campuses use DSpace, while the vast majority (87%) haven't installed any digital library software. This underscores the pressing need for universities to prioritize DSpace or similar software to

enhance access to research materials. Implementing such software offers benefits like streamlined information management, but it also highlights the necessity for increased awareness and resources to support its adoption.

Table 7. Makes decision regarding the selection of software.

Decision on selection of software	Number of Campuses	Librarian	Office authority	Professionals	In %
Koha	8	1		7	23%
Mitra ERP	17		17		48%
Mumolus	8		8		23%
E-library	1		1		3%
Cosmos	1		1		3%
Grand Total	35	1	27	7	100%

Source: Online survey, 2022 A.D.

The data shows disparities in software selection processes among 35 campuses. Koha saw significant professional involvement (87.5%) with minimal librarian input (12.5%). Mitra ERP decisions were solely made by office authorities (100%), excluding librarians and professionals. Mumolus and E-library involved office authorities partially, while Cosmos

solely involved office authorities. Lack of comprehensive stakeholder engagement may hinder decision quality. It's essential to consider factors like cost, functionality, user needs, and institutional policies. In conclusion, a more inclusive approach involving all stakeholders is crucial for informed software selection decisions.

Table 8. Responsible for installation, development and implementation of automation and software project.

Responsible for installation, development of software	Number of Campuses	Library staff	ICT department	Library staff and ICT attached staff	Out-sourcing	In %
Koha	8	7		1		23%

Responsible for installation, development of software	Number of Campuses	Library staff	ICT department	Library staff and ICT attached staff	Out-sourcing	In %
Mitra ERP	17				17	48%
Mumolus	8		5		3	23%
E-library	1				1	3%
Cosmos	1				1	3%
Grand Total	35	7	5	1	22	100%

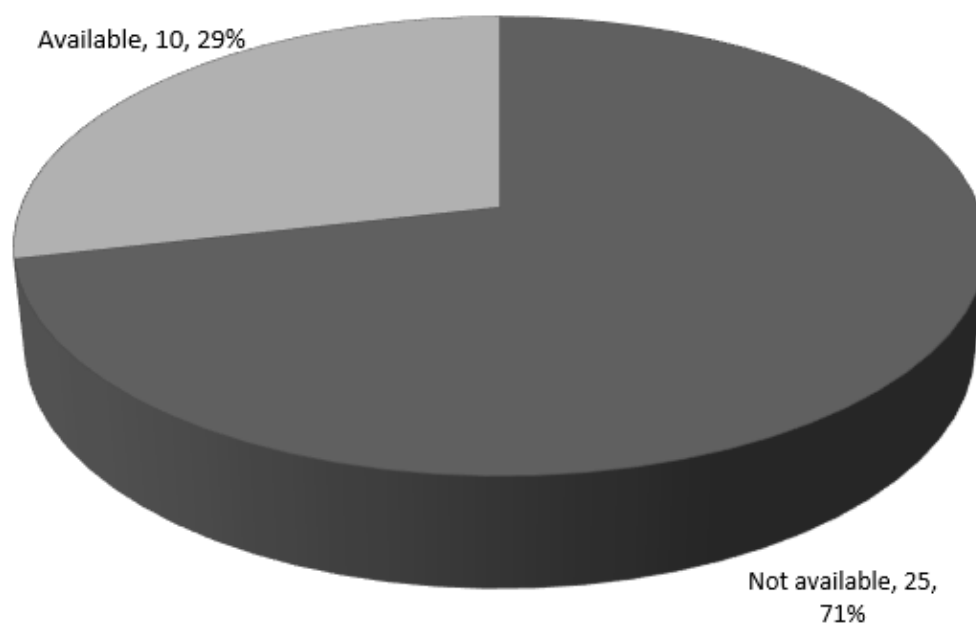
Source: Online survey, 2022 A.D.

The data suggests that Koha software predominantly relies on library staff for installation, development, and implementation tasks, with 88% of campuses reporting this approach. Conversely, Mitra ERP, Mumolus, E-library, and Cosmos tend to outsource these responsibilities, with varying percentages of campuses (ranging from 23% to 48%) opting for outsourcing.

Interestingly, none of the campuses using Mitra ERP,

Mumolus, E-library, or Cosmos mentioned joint involvement between library staff and ICT personnel, indicating a lack of collaboration between these two groups.

It's important to note that the data represents responses from surveyed campuses and may not capture the preferences and practices of all users. Further investigation is needed to understand the reasons behind these different approaches and their potential impact on project implementation efficiency.



Source: Online survey, 2022 A.D.

Figure 6. Status of easily availability of technician for maintenance.

The provided data presents the status of easily available technicians for maintenance in a sample of 35 campuses. The analysis shows that only 10 (29%) campuses have technicians available for maintenance, while 25 (71%) campuses do not have technicians available. These findings suggest that there

is a significant need for universities to prioritize the allocation of resources and support for the maintenance of their technological infrastructure in order to improve the efficiency and effectiveness of their digital library systems.

Table 9. Machine readable cataloguing (MARC) data import and export in software.

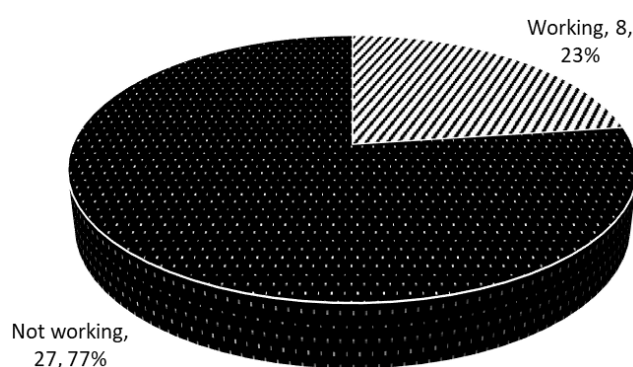
Provision for MARC data import and export in software	Number of Campuses	Available	Not available	Percentage
Koha	8	8		23%
Mitra ERP	17		17	48%
Mumolus	8		8	23%
E-library	1		1	3%
Cosmos	1		1	3%
Grand Total	35	8	27	100%

Source: Online survey, 2022 A.D.

Analysis of the data indicates that Koha is the sole software system among those surveyed offering MARC data import and export functionality, as reported by all 8 campuses (100%). This feature is essential for libraries relying on MARC standards for cataloging and data interchange. Conversely, Mitra ERP, Mumolus, E-library, and Cosmos lack native support for MARC data import/export, posing a limitation for these systems. While Koha seems advantageous for MARC-centric libraries, comprehensive evaluation of features and user needs is necessary for informed software selection.

Out of the 35 campuses surveyed, only 23% (8) reported using MARC data import and export in their library software. Conversely, 77% (27 campuses) do not utilize this feature. This low adoption rate suggests a possible deficiency in digital resource management, given the significance of MARC in library cataloging and organization. Further research is required to uncover the reasons behind this limited uptake and

its implications for library services.



Source: Online survey, 2022 A.D.

Figure 7. MARC data import and export using of software.**Table 10.** Getting refresher training about the software.

Refresher training about software	Number of Campuses	Yes	No	In %
Koha	8	7	1	23%
Mitra ERP	17	1	16	48%
Mumolus	8	1	7	23%
E-library	1		1	3%
Cosmos	1		1	3%
Grand Total	35	9	26	100%

Source: Online survey, 2022 A.D.

Table 10 data indicates that a significant majority of campuses using Koha receive refresher training for the software, highlighting the importance of staying updated and skilled in

system utilization. Conversely, for Mitra ERP, Mumolus, E-library, and Cosmos, only a small proportion of campuses reported receiving such training, suggesting a gap in keeping

users updated with software features and enhancements. This underscores the importance of ongoing training and professional development for all software systems to ensure users possess the necessary skills for optimal utilization. Address-

ing the gap in refresher training for non-Koha software systems is crucial to enable users to fully leverage software capabilities and stay abreast of the latest developments.

Table 11. Purpose of library software use and installed for.

Purpose of Library Software use and installed for	No. of Campuses library	In Percentage
House-keeping operations	5	11%
Book Circulation & Maintain record	16	36%
Cataloguing, Circulation, etc.	5	11%
Library automation	9	20%
Not installation library software	10	22%
Grand Total	45	100%

Source: Online survey

In surveyed campus libraries, library software serves various purposes. The most prevalent is book circulation and record-keeping, utilized by 36% of libraries. Following closely are library automation and housekeeping operations,

employed by 20% and 11% of libraries, respectively. A smaller percentage uses software for cataloging and circulation. Notably, 22% of surveyed libraries do not utilize any library software at all.

Table 12. Available features in library software.

Available features in library software	Number of Campuses	Housekeeping	Integrated Offline	Integrated with Online	In %
Koha	8	8	8	8	23%
Mitra ERP	17			17	48%
Mumolus	8	3	3	2	23%
E-library	1	1			3%
Cosmos	1	1			3%
Grand Total	35	13	11	27	100%

Source: Online survey, 2022 A.D.

In Table 13 analysis:

Koha: All 8 campuses using Koha reported comprehensive functionalities including housekeeping, integrated offline, and integrated online features.

Mitra ERP: Among 17 campuses, all reported housekeeping, but none mentioned integrated offline features, focusing on integrated online capabilities.

Mumolus: Out of 8 campuses, there's a balanced distribution of features with reported housekeeping, integrated offline,

and integrated online functionalities.

Limited data for E-library and Cosmos: E-library reported integrated offline feature, while Cosmos reported housekeeping.

Overall, Koha offers a comprehensive feature set, Mitra ERP emphasizes integrated online capabilities, and Mumolus exhibits balanced features. Limited data exists for E-library and Cosmos.

Table 13. Status on satisfied with the software.

Status on satisfied with the software	Number of Campuses	Yes	Want to replace	In %
Koha	8	7	1	23%
Mitra ERP	17	4	13	48%
Mumolus	8	1	7	23%
E-library	1	0	1	3%
Cosmos	1	0	1	3%
Grand Total	35	34%	66%	100%

Source: Online survey, 2022 A.D.

The analysis reveals high satisfaction with Koha, with 88% of campuses content with the software. Conversely, Mitra ERP and Mumolus face significant dissatisfaction, with only 24% and 13% of campuses satisfied, respectively. E-library

and Cosmos, based on single-campus data, also show dissatisfaction. Further investigation is crucial to address specific concerns effectively, and accurate evaluation is needed to determine overall user satisfaction levels.

Table 14. Campus facing the problems with library management software.

Problems on software	Number of Campuses	Updating	Maintenance	Reinstallation	Handling	Percentage
Koha	8	4			4	23%
Mitra ERP	17	2	4	3	8	48%
Mumolus	8		8	8		23%
E-library	1		1	1		3%
Cosmos	1		1	1		3%
Grand Total	35	17%	12%	37%	34%	100%

Source: Online survey, 2022 A.D.

The data indicates varying software issues among campuses:

Koha: Common issues include updating and handling problems.

Mitra ERP: Problems encompass updating, maintenance, reinstallation, and handling.

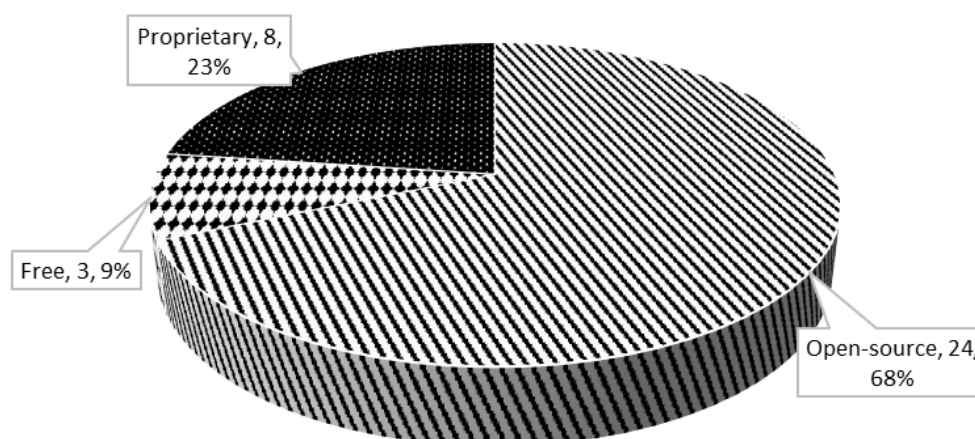
Mumolus: Primarily encounters maintenance and reinstallation issues.

Limited data for E-library and Cosmos: Reported issues include handling for E-library and maintenance and reinstallation for Cosmos.

Overall, the data highlights diverse software challenges,

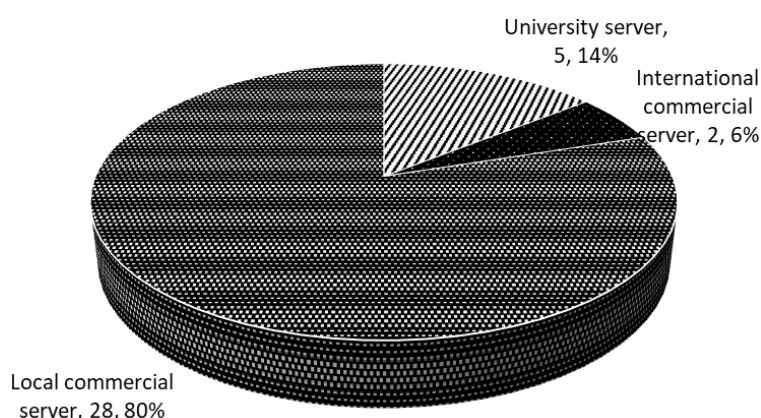
emphasizing the need for further investigation to address specific issues and enhance user experience.

Figure 8 shows that information, a survey conducted on 35 campuses found that 69% of the campuses prefer open-source software, 22% prefer proprietary software, and 9% prefer free software due to its cost-effectiveness. The data suggests that libraries value the flexibility, customization, and cost-effectiveness of Open-source software, while Proprietary software may offer unique features or support. However, the selection of free software may have limited support and updates.



Source: Online survey, 2022 A.D.

Figure 8. Useful campus library software for its durability.



Source: Online survey, 2022 A.D.

Figure 9. Campus libraries software hosted from.

In Figure 9, among 35 sampled campuses, only 14% host University Servers, while the majority (80%) opt for Local Commercial Servers. A minimal 6% host International Commercial Servers. This suggests that Local Commercial Servers are prevalent in academic environments, while Uni-

versity Servers and International Commercial Servers are less common. The absence of information on hosted software emphasizes the necessity for improved communication and transparency regarding library services and resources.

Table 15. Training offers available for users.

Training offers available for users	Number of Campuses	Yes	No	In %
Koha	8	5	3	23%
Mitra ERP	17	5	12	48%
Mumolus	8	1	7	23%
E-library	1		1	3%
Cosmos	1		1	3%
Grand Total	35	31%	69%	100%

Source: Online survey, 2022 A.D.

Vertically, Koha has the highest availability of training offers among surveyed campuses, followed by Mitra ERP and Mumolus with lower availability. E-library and Cosmos reported no training offers.

Horizontally, across all campuses, 31% reported training

offers available while 69% did not.

Overall, the data suggests a relatively low availability of training opportunities for library software systems, indicating a potential need for increased provision of training resources and support.

Table 16. Software training frequency required.

Level of frequency need for training on software	Number of Campuses	Rarely	Frequently	Occasionally	In %
Koha	8	6	0	2	23%
Mitra ERP	17	0	12	5	48%
Mumolus	8	0	6	2	23%
E-library	1		1		3%
Cosmos	1		1		3%
Grand Total	35	17%	57%	26%	100%

Source: Online survey, 2022 A.D.

The data reveals variations in training needs among surveyed campuses:

Koha: Most campuses reported rare training needs.

Mitra ERP and Mumolus: These systems showed a higher demand for frequent training.

Insufficient data for E-library and Cosmos to determine training frequency.

Overall, the majority of surveyed campuses reported either frequent or occasional training needs on software. This emphasizes the importance of considering campuses' training requirements when implementing software systems to develop appropriate training programs and effectively support software usage.

Table 17. Getting refresher training about the software.

Getting refresher training about the software	Number of Campuses	Yes	No	In %
Koha	8	7	1	23%
Mitra ERP	17	1	16	48%
Mumolus	8	1	7	23%
E-library	1		1	3%
Cosmos	1		1	3%
Grand Total	35	9	26	100%

Source: Online survey, 2022 A.D.

The data highlights that refresher training opportunities are more prevalent among campuses using Koha compared to other software systems. Specifically, 88% of Koha users reported receiving refresher training, indicating recognition of the importance of staying updated and skilled. However, only a small proportion of campuses using Mitra ERP, Mumolus,

E-library, and Cosmos reported receiving such training, potentially indicating a gap in keeping users updated with software features. Overall, ongoing training and professional development are crucial for effective software utilization across all campuses.

Table 18. Satisfaction level of different modules of installed library management software.

Satisfaction level of different modules	Number of Campuses	Acquisition	Catalogue	Processing	Circulation	reference	Administration	Reporting	budget	In %
Koha	8	Highly satisfied	Highly satisfied	Highly satisfied	Highly satisfied	Highly satisfied	Highly satisfied	Highly satisfied	Highly satisfied	23%
Mitra ERP	17	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Dissatisfied	49%
Mumolus	3	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Dissatisfied	9%
E-library	1	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Dissatisfied	3%
Cosmos	8	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Slightly satisfied	Dissatisfied	Dissatisfied	23%
Grand Total	35									100%

Source: Online survey, 2022 A.D.

The data indicates higher satisfaction ratings for Koha across various modules compared to Mitra ERP, Mumolus, E-library, and Cosmos. Koha received high satisfaction ratings for acquisition, cataloging, processing, circulation, reference, administration, reporting, and budget modules, with 23% of surveyed campuses reporting high satisfaction for each. Conversely, the majority of campuses using other systems expressed dissatisfaction or slight satisfaction with these modules, suggesting potential gaps in meeting their needs. Further investigation and evaluation are necessary to understand specific reasons behind satisfaction levels and inform software selection decisions.

4. Result

Findings on Library Management Software in TU Campus Libraries in Nepal.

1) Adoption of Technology:

- Many campus libraries lack sufficient adoption of library management software.
- Need for improvement to enhance operations and services.

2) Online Presence:

- Some campus libraries lack robust online platforms like websites and digital catalogs.
- Limitation hinders effective outreach to a broader audience.

3) Book Collections:

- Certain campus libraries need to enhance their collections to meet diverse user needs.
- Importance of acquiring a wider range of relevant and up-to-date materials.

4) Journal Subscriptions:

- Improved subscriptions are needed in some campus libraries.

- Limited access to journals can hinder research and academic activities.

5) Underutilized Resources:

- Lack of interest and usage of resources like audio-video tapes, photographs, and microfiches.
- Need to reassess relevance and promote usage.

6) Technology Progress:

- Digital divide exists among campus libraries.
- Importance of ensuring equal access to technology and resources.

7) Staffing Shortage:

- Shortage of professional staff, technicians, and IT personnel across 45 campus libraries.
- Crucial to rectify staffing gap for efficient library management and operations.

5. Conclusion

1) Staffing Adjustments and Training:

- Conduct comprehensive assessments to identify areas of shortage.
- Recommend recruitment drives, training programs, and incentives.
- Develop tailored training programs covering various aspects of library management and technology integration.

2) Factors Influencing Automation and Adoption of Open-Source Software:

- Investigate factors influencing decision-making on automation and software adoption.
- Identify barriers and facilitators.

- c) Provide recommendations to encourage flexible and cost-effective solutions.
- 3) *User Training and Software Updates:*
 - a) Emphasize training for effective software utilization.
 - b) Highlight the importance of regular software updates.
- 4) *Investment in Technology and Online Presence:*
 - a) Advocate for investment in technology infrastructure.
 - b) Encourage development and maintenance of online platforms.
- 5) *Expansion of Book Collections:*
 - a) Recommend strategies for expanding collections.
 - b) Conduct further research to identify specific areas for improvement.
- 6) *Access to Journals and Periodicals:*
 - a) Develop recommendations to improve access.
 - b) Advocate for increased subscription resources.
- 7) *Campus-Specific Strategies:*
 - a) Recognize unique needs of each campus library.
 - b) Recommend campus-specific strategies for enhancement.
- 8) *Further Research:*
 - a) Encourage comprehensive studies on library management software adoption.
 - b) Investigate reasons for limited ICT adoption.
 - c) Provide evidence-based recommendations for future strategies.

6. Recommendations

- 1) *Online Presence:*
 - a) Encourage investing in a strong online presence for campus libraries in Nepal.
 - b) Develop user-friendly websites and digital catalogs to facilitate communication with stakeholders and enhance access to library resources.
- 2) *Customized Book Collections:*
 - a) Advise each campus library to assess and address its specific book collection needs.
 - b) Conduct further research to identify subject areas or genres requiring expansion.
 - c) Recommend strategies for acquiring relevant and up-to-date materials to meet user demands.
- 3) *Scholarly Communication:*
 - a) Promote scholarly communication by encouraging campus libraries to actively engage in publishing and subscribing to journals and periodicals.
 - b) Highlight the significance of providing access to a wide range of academic literature for faculty and students.
- 4) *Further Research:*
 - a) Propose conducting additional research to gain deeper insights into identified trends.
 - b) Explore potential areas for improvement in library management software and resource allocation.
 - c) Consider the unique needs and challenges of campus

- libraries in Nepal for tailored recommendations.
- 5) *Evaluation of Underutilized Resources:*
 - a) Conduct an evaluation of underutilized resources such as audio-video tapes, photographs, maps, and microfiches.
 - b) Determine their relevance and potential for future use.
 - c) Provide recommendations on managing, preserving, or repurposing these resources.
- 6) *Staffing Adjustments and Training Programs:*
 - a) Address the need for staffing adjustments and training programs to enhance the skills of professional staff, technicians, and IT personnel.
 - b) Recommend appropriate staffing levels and develop training initiatives to improve library management and operations.
- 7) *Open-Source Software Adoption:*
 - a) Encourage the adoption of open-source software for library management.
 - b) Highlight the benefits of flexibility and cost-effectiveness.
 - c) Ensure uniformity in software usage across constituent campus libraries.
- 8) *User Training and Software Updates:*
- 9) *Implement training programs for library users:*
 - a) Offer introductory sessions to familiarize users with software features and functionalities.
 - b) Provide advanced training for more specialized tasks and modules.
 - c) Conduct refresher courses to keep users updated on software usage.
 - d) Recommend regular software updates.
 - e) Stay informed about the latest technological advancements and updates in library management software.
 - f) Schedule regular updates to ensure the software remains up-to-date with security patches and new features.
 - g) Communicate updates effectively to users, providing guidance on new functionalities and improvements.

Abbreviations

A.D.	Anno Domini (In the Year of the Lord)
B.S.	Bikram Sambat (Nepali Date)
EMIS	Education Management Information System
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology
ILL	Inter-Library Loan
ILMS	Integrated Logistics Management System
IT	Information Technology
MARC	Machine-Readable Cataloging
OPAC	Online Public Access Catalogue
OSS	Open-source Software
TU	Tribhuvan University
TUCL	Tribhuvan University Central Library

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