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A Comparative Assessment of the Automation Status of University Libraries in Sri Lanka: Current Practices and New Trends

Sajeewanie D. Somaratna¹

ABSTRACT

Over the past three decades, the traditional university library system in Sri Lanka has undergone several changes as a result of technological advancement. This trend has become increasingly pronounced as university libraries in Sri Lanka have advanced in their automation status. This study intends to evaluate the status of library automation practices and assess the status of such applications in Sri Lankan university libraries. The total population sampling method was applied, and data was collected from 16 state university libraries in Sri Lanka, under the purview of the University Grants Commission, Sri Lanka. Currently, **Koha Open-Source Software** (OSS) has been adopted by all state university libraries in Sri Lanka. The most prominent reason for switching to **Koha** OSS from commercial software is the difficulty of customizing the commercial software according to each library's requirements. To secure the library collection, the majority of the university libraries in Sri Lanka use only manual security systems, and they have employed an outsourced security team or library staff for security purposes. The rest of the libraries use sophisticated security gates powered by RFID or electromagnet detectors. Among them, 18.2% use security gates compatible with electromagnet tapes, while 15.2% use RFID security systems with RFID-compatible gates. Results reveal all the university libraries in Sri Lanka have adopted partially or fully automated circulation systems. The circulation process in 97% of libraries is partially automated, and they use barcode readers and/or RFID workstations.

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Only the Science Faculty library of the University of Colombo has implemented a fully automated circulation system with self-check-in/out machines powered by RFID technology. Insufficient funds, interrupted power supplies, and poor infrastructure facilities are the most prominent difficulties for the automation process. Most of the libraries proposed increasing the library allocation as a solution to overcome the obstacles of the automation process. Frequent studies are recommended to identify updates in the automation process of libraries in Sri Lanka.

Keywords: Library automation, University libraries, *Koha OSS*, RFID, Sri Lanka

Introduction

The traditional library has been transformed into an automated, electronic, virtual, or digital library as a result of the quick development and adoption of contemporary technology. This revolution has completely changed the library scenario, especially in the university set-up. Several studies were conducted by university librarians in Sri Lanka beginning in the early 1990s to determine the automation status of university libraries. However, after the study carried out by Malkanthi in 2017, there have been no comparative studies done in Sri Lanka to explore the automation status of the university libraries in Sri Lanka. However, in recent years, it was evident that most university libraries that used commercial software switched to OSS for several reasons. There are a few pieces of evidence for exploring the status of the automated circulation processes and book theft control or collection security, but it was also observed that several university libraries in Sri Lanka introduced RFID or other technologies to create smart libraries. As there has been no comparative study done for seven years to explore the present automation status in university libraries in Sri Lanka, this study was planned to accomplish the task of exploring the status of the automation process in university libraries in Sri Lanka. Hence, this intends to measure the status of library automation techniques and assess the status of such applications in Sri Lankan university libraries. To achieve the main aim the following objectives were set.

1. To explore Library Management Software (LMS) used by the university libraries
2. To explore the book theft control mechanisms implemented by university libraries

3. To explore the automation status of the circulation process of the university libraries
4. To identify barriers faced by the university libraries when implementing the automation process and possible solutions to overcome the obstacles

Methodology

The total population sampling method was applied, and data was collected from all state university libraries under the purview of the University Grants Commission, Sri Lanka. A survey was conducted among 16 main libraries and 19 branch libraries attached to the universities in Sri Lanka. Self-administered questionnaires were distributed as Google Forms among the librarians of respective universities and the deputy/senior/assistant librarians who are in charge of branch libraries. Forty-two questionnaires were distributed, and 35 librarians, and the response rate is 83.3%. The questionnaire was designed under three main subcategories: the status of the library management software, the automation status of the circulation process, and book theft control or collection security. In addition to that, obstacles faced by libraries when automating were identified, and possible solutions to overcome the obstacles. Data were analyzed both qualitatively and quantitatively.

Results

Out of 16 state university libraries in Sri Lanka, 10 universities (University of Colombo, University of Peradeniya, University of Sri Jayewardenepura, University of Kelaniya, Open University of Sri Lanka (OUSL), University of Ruhuna, University of Jaffna, Sabaragamuwa University Sri Lanka and South Eastern University of Sri Lanka) commenced library automation before 2000.

Table 1 depicts how library management software usage has changed throughout the last three decades since it was first introduced in the 1990s. Most of the libraries that initiated the automation with CDS/ISIS, followed by WINISIS, moved to commercial software in early 2000. Four main universities in Sri Lanka, the University of Colombo, the University of Peradeniya, the University of Sri Jayewardenepura, and the Open University of Sri Lanka moved to Alice for Windows (AfW). The University of Moratuwa moved to another commercial software called LibSys, while the University of Kelaniya moved to LibSuit. Despite that, the University of Ruhuna moved to an open-source software program called Koha in 2004. However, currently, all the main libraries of the University of Sri Lanka have moved to Koha OSS,

while most of the branch libraries of the universities have done the same. As depicted in Table 1, the majority of the libraries have switched to Koha LMS, within the last five years, but the University of Ruhuna, the first university library in Sri Lanka to adopt Koha LMS, has been using it for more than 15 years.

Table 1: Evolution of LMS throughout the period (1990-2022)

Name of the University	Software 1	Software 2	Current Software (2022)	Duration of adopting the current LMS
UOC	CDS/ISIS to WinISIS	<i>AfW</i>	<i>Koha</i>	<5 years
UOP	CDS/ISIS to WinISIS	<i>AfW</i>	<i>Koha</i>	6 -10 years
UOK	CDS/ISIS to WinISIS	LibSuit	<i>Koha</i>	<5 years
UOM	CDS/ISIS to WinISIS	LibSys	<i>Koha</i>	6 -10 years
UOR	CDS/ISIS to WinISIS	<i>Koha</i>	<i>Koha</i>	>15years
USJP	CDS/ISIS to WinISIS	<i>AfW</i>	<i>Koha</i>	6 -10 years
OUSL	CDS/ISIS to WinISIS	<i>AfW</i>	<i>Koha</i>	6 -10 years
UOJ	PURNA	LibSys	<i>Koha</i>	<5 years
EUSL	<i>LibSys</i>	<i>Koha</i>	<i>Koha</i>	<5 years
RUSL	CDS/ISIS to WinISIS	<i>Koha</i>	<i>Koha</i>	11 - 15 years
SEUSL	CDS/ISIS to WinISIS	<i>Koha</i>	<i>Koha</i>	11 - 15 years
SUSL	CDS/ISIS to WinISIS	PURNA	<i>Koha</i>	<5 years
UWU	<i>Koha</i>	<i>Koha</i>	<i>Koha</i>	<5 years
WUSL	<i>Koha</i>	<i>Koha</i>	<i>Koha</i>	6 -10 years
UVPA	<i>CDS/ISIS to WinISIS</i>	<i>Koha</i>	<i>Koha</i>	6 -10 years
UOV	<i>Koha</i>	<i>Koha</i>	<i>Koha</i>	<5 years

Among the reasons for switching to the current OSS (Koha) from the previous system/s, 'difficulties when customizing according to each library requirement' is the most prominent with 67.6%. Followed by 'incompatibility with other automation-related accessories', 'high annual subscription cost' and 'mismatching with the current requirements of the library' scored more than 50%. Results reveal that cataloguing, circulation, OPAC, and patron modules are the most used modules by university libraries.

Book theft control/collection security

University libraries in Sri Lanka use different mechanisms to secure their collections. RFID technology, electromagnetic (EM) tapes with automated security gates, CCTV camera monitoring, and manually operating security systems are among them. The majority of the university libraries in Sri Lanka, including the branch libraries, use only manual security systems. The percentage is 60.6%, and they have employed an outsourced security team or library staff for security purposes. The rest (39.4%) of the libraries use sophisticated security gates, powered by RFID or EM detectors. Among them, 18.2% use security gates compatible with tattle or electromagnetic tapes, while 15.2% use RFID security systems with RFID-compatible gates. The libraries of the University of Moratuwa, South Eastern University, and the Science Library of the University of Colombo are examples of libraries that have used RFID technology to secure their collections by installing RFID security gates. The Library of the University of Ruhuna and the Medical Faculty Library of the University of Sri Jayewardenepura use hybrid security gates that detect both electromagnetic tapes and RFID tags, and their collections are secured by a dual method. Most of the libraries that installed EM gates between 2000-2010 are now facing issues with outdated hardware and the unavailability of accessories. Among the university libraries in Sri Lanka currently, 56.3% of the libraries use CCTV monitoring systems to secure their collection. Despite the fact that a CCTV operating system is available, most users have stated that their entire collection is not covered by the limited number of cameras. When checking the overall satisfaction of libraries with available security systems, slightly more than half of the librarians are satisfied with the available security systems, and the percentage is 51.7%.

Automated circulation process

Results reveal all the university libraries in Sri Lanka have partially or fully automated circulation systems. The circulation process in 97% of libraries is partially automated, and they use barcode readers or RFID workstations. The process is handled by the library staff who work at the counters. Only the Science Faculty library of the University of Colombo adopted a fully automated circulation system with self-check-in and self-check-out machines powered by RFID technology. Students manage their books using self-check-in and self-check-out machines when borrowing and returning books. According to the results, there is no evidence for the existence of a completely manually operated circulation system in any university library in Sri Lanka.

Difficulties faced when automation

Insufficient funds (76.5%), interrupted power supply (61.8%), and poor infrastructure facilities (52.9%) are the most prominent difficulties faced by university libraries when implementing the automation process. Universities in Sri Lanka have used different mechanisms to overcome the obstacles of automation.

The majority of the libraries proposed to increase the library allocation, and the percentage is 81.2%. They also have suggested having automatic backup systems, and the percentage is 75.8%. Installing UPSs (69.7%), continuous staff training (54.5%), and installing replication servers (45.5%) and generators (45.5%) are suggested solutions to overcome the obstacles of the automation process.

Discussion, Conclusions and Recommendations

Currently, all of the main libraries in state universities have been converted to Koha OSS, which has shed some light on the automation status of university libraries in Sri Lanka. Most libraries, in particular, have formed their own IT teams with expert and practical knowledge on Koha OSS, which will undoubtedly help to improve the automation status of Sri Lankan university libraries. The importance of the library automation process, how efficiently and effectively it helps to access the collection, and how it helps to improve the security of the library collection should be identified by all the university administrators, and this will help to convert university libraries into more sophisticated and user-friendly libraries. Due to the rapid changes in the technology field, university libraries in Sri Lanka would adopt novel innovation technologies from

time to time to upgrade their automation status. As a result, it is recommended that periodic studies be conducted in the future to investigate the status and innovations of the automation process of university libraries in Sri Lanka.

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