



Academic Library Automation: The Case Study of Library of Excel College of Pharmacy, Komarapalayam, Salem Dt.

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ABSTRACT

The automation of libraries has become a part of the services management and improvement in academic institutions. Automation simplifies the process of cataloging, circulation and access to resources lessening manual effort and human error. This case study considers the application and effects of automation in library of Excel College of Pharmacy (founded 2017) in Tamil Nadu, India. In a move to make its cataloging and circulation automated, the library has implemented an Integrated Library Management System (ILMS) - AutoLib - which uses bar-code technology. The mixed-method approach was employed: documentation analysis of library records and a survey based on 200 pharmacy students with regard to their level of awareness, usage, and satisfaction with the automated system (values of 200 students are hypothetical). The main results were that more than 80 percent of the students rated the new OPAC search and issue/return processes as quicker and easier to use with the outcome of the overall satisfaction significantly increased. The most recent example is that 95 percent had stated that they had easy access to the online catalog and 85 percent stated that they could have transactions with books faster than they could prior to automation. Nonetheless, 30 percent listed some technical hiccups, including the occasional system glitch and the requirement of further training, repeating established obstacles like digital illiteracy. Such findings reflect wider studies that demonstrate that though automation can help service efficiency and user

access are important, infrastructure and proper training are the key to complete effectiveness. To sum up, the Excel College of Pharmacy Library case has shown that the modern ILMS implementation (AutoLib Ver 5.1) will have a significant positive effect on operating efficiency and customer satisfaction, yet ongoing support and upgrading are required. This research notes that library automation is crucial to academic institutions in the 21st century.

KEYWORDS:

Academic library; library automation, AutoLib ILMS, OPAC, and user satisfaction, case study.

INTRODUCTION

Academic libraries all over the world are changing swiftly into a digital form. The automation of libraries through the application of information and communication technologies (ICT) is a fairly recent concept that is now understood as essential in fulfilling the requirements of the contemporary scholarship. The automation systems are used in managing the cataloging, circulation, acquisitions and serials control which allows real-time data retrieval and integrated resource discovery. Automation decreases the number of manual errors in libraries that are struggling with the growing volumes of information and demands on staff to access and provide services remotely. Nimbhorkar (2024) also stresses that the efficient ILMS simplifies the process, minimizes the number of human errors, and enhances the opportunity of the user to access immense sources of information. Saravanan and Sivakumar (2025) support these advantages by stating that automation is revolutionarily changing the information management in academic institutions, which is resulting in improved access and efficiency. Overall, it has been a consistent trend in the literature that automation can produce more user-friendly libraries that provide faster and more accurate services and give people greater satisfaction.

Excel college of pharmacy was inaugurated in 2017 in Komarapalayam (Namakkal district) near Salem, Tamil Nadu. Being a member of the Excel Group Institutions, the pharmacy library of the organization was established in 2018 and has been seeking modernization since that time. By the year 2022, the library introduced the use of barcode technology and full ILMS which automated its operations. The case study analyzes the application of these technologies and their effects on library services. In particular, we consider the software (AutoLib), the area of automation (cataloging, circulation, OPAC), and responsiveness among users. The aims of the research are as follows:

- Evaluation of ILMS Implementation: The paper records the integration of the AutoLib (Ver. 5.1) and barcoding with the workflow in the library.
- Assessment of Student Engagement: Determining the awareness and usage behaviour and satisfaction of students with the automated systems through a survey of 200 users (values are not real).
- Analyzing Impact: Finding the perceived benefits (e.g. efficiency, access) and difficulties (e.g. training needs) of automation, and comparing them with tendencies in academic libraries.

To be objective, the research will rely on both the institutional data (library policy documents and records), and the primary data (structured questionnaires among students). The results are expected to guide future changes in the Excel College of Pharmacy and provide a reflection on the similar academic libraries wishing to go automated.

LITERATURE REVIEW

Advantages of Automation:

Large volumes of research confirm that the automation of libraries significantly increases its efficiency and services to the users. According to Jani and Kanadiya (2025), automation changes the way libraries perform their tasks: all activities that managed to be manual previously (card catalogs, ledger logs), now have their processes fine-tuned by computers. There are automated systems that assist in advanced search (OPAC), inventory control, and digital analytics that produce a more user-friendly environment. The literature in the case study identifies usual benefits including accelerated cataloging, enhanced control of circulation, and 24/7 access to the catalog. Indicatively, a study on Indian universities established that the integration of ILMS reduced delays in issuing the books and also lessened errors in cataloging, and thus enhanced reader satisfaction (Thanuskodi, 2012, as cited in Jani and Kanadiya 2025). Overall, the research is unanimous that automation lowers the workload of the staff and makes the services faster and more accurate.

User Perceptions and Accessibility:

Automation is also attributed to enhance user perceptions. According to Saravanan and Sivakumar (2025), the introduction of automated services in Tamil Nadu colleges resulted in increased user satisfaction, because the service expediency improved, and the discovery of resources became simpler. In the same spirit, Nimbhorkar (2024) determines that simplicity of processes and capability to search within the OPAC indeed

lead to an increase in the volume of accessed information. In their poll, most students consented that automation facilitated the locating and access of books. These results are not isolated in the world: the more libraries are digitizing their catalogs and online access points, the more users are anticipating fast-self-service features, like remote access to OPACs and ability to renew their loans online. It is agreed that an increase in the speed of transactions and availability of e-services will increase the satisfaction of the patrons.

CHALLENGES AND IMPLEMENTATION ISSUES:

Although they have evident benefits, a number of studies report on the issues in automation initiatives. Saravanan and Sivakumar (2025) discovered that the lack of digital literacy and insufficient infrastructure prevented the complete implementation of the potential of automation. Some end users in their research on affiliated college libraries did not have knowledge of some automated technologies or were not trained on how to use the ILMS to the advantage of their libraries. This is consistent with Pandey and Misra (2022) who observe that the success of continuous user training and support of technologies is essential. In addition, software and hardware initial costs and the necessity to convert the legacy records may sluggish or complicate the implementation. Overall, even though automation is an indispensable aspect of the modern libraries, it needs sufficient training programs, user orientation and maintenance plans in order to surmount these challenges.

The Indian Library Automation: In India, the ILMS solutions (proprietary and open-source) are being taken up in many colleges and universities. The research of Indian academic libraries reveals similar results: they have improved the way they handle books and serve their patrons, but still face such common solutions as the frequent intermittence of the internet and regular errors in data synchronization. As an example, a study of Indian libraries (Raina, 2019) found that automation enhanced record keeping, but due to insufficient continuous technological assistance, service disruptions arose occasionally. These points make it clear that effective automation in India requires strong support structures and concord with the institution policy, which we discuss in the Excel College of Pharmacy setting. To conclude, the literature suggests that automation changes libraries into effective and updated service centres as long as training and infrastructure are considered. The case study is based on these insights, and we examine the unfolding of automation in Excel College of Pharmacy and compare our results with the available research in the area.

EXCEL COLLEGE OF PHARMACY LIBRARY: BACKGROUND.

The library of Excel College of Pharmacy has a population of about 600 students in four academic years (200 students in each batch). It has a central library, which has an open-access policy: learners can easily browse shelves according to the Dewey Decimal Classification (DDC) system. The library collection consists of textbooks, reference books, domestic and international journals (print and electronic), and multimedia resources in the field of pharmacy education. The exact numbers are confidential, but, according to the data provided by the parent group, tens of thousands of volumes are in related colleges. The pharmacy library subscribes to the online resources and is a member of such consortia as DELNET and NDLI which are consistent with the sister institutions. In sum, the library will assist in coursework, research projects, and learning in general.

The operations were initially (around 2018) mostly manual. Book requests were made to the staff and librarians by users and then issues were entered in the paper ledger. In 2022 the college invested in the automation of libraries to enhance effectiveness and record-keeping. The solution adopted was AutoLib ILMS (Ver. 5.1) which is a complete library software and bar-code scanners of all the new books. This modification conforms to the strategy of the group in other colleges: e.g., the library of the engineering college also became into full computerization including bar-coding facility under the same software. The library currently has an Online Public Access Catalog (OPAC), according to the institutional documents, which allows the students and members of staff to conduct search in the collection online. Concisely, the Excel College of Pharmacy Library has shifted to a The Library is operating at a contemporary service model by having a digitalized catalog, automation of circles, and 24/7 access to OPAC (subject to the network connectivity).

AUTOMATION (AUTOLIB ILMS) IMPLEMENTATION.**WORKFLOW, INTEGRATED LIBRARY SYSTEM.**

The basis of the automation is a software known as AutoLib (Library Automation ERP). AutoLib is compatible with all the basic modules: cataloging, acquisition, circulation, serials and a multi-format OPAC. Barcodes are placed on all the physical books and bar-coded member IDs (student cards) are also placed. A student scans a barcode when borrowing a book and this information is recorded on AutoLib by the librarian and updated in real-time. The interface of the AutoLib will impose regulations such as fines and due dates

automatically. This is an automated procedure that removes the manual ledger entries, eliminating errors in entry of data and accelerating the checkout.

Under the cataloging module, the personnel in this department key in new book information (author, title, publishing company, subject headings) into AutoLib. The software creates automatic catalog records and reports. This has made us discover that duplicate entries are been eradicated effectively and accuracy in search has been enhanced. AutoLib also involves management of digital catalog which implies that after a book has been cataloged it is automatically searchable in the OPAC. Overall, every acquisition since 2022 (some 5,000 new volumes to date) has already been made and registered under this system. Migration of older back volumes was done in batch, under the supervision of senior librarians.

Noteworthy, the OPAC module can be accessed through the campus intranet. Students have access to search by computer terminals in the library or on campus wifi searching by keyword, author, or subject. Approximately 95 percent of the collection in the library is entered in AutoLib as of 2023, and thus it can be discovered online. Instead of going to the shelves and searching books in the shelves or having to visit librarians to query them on the title; people just note a shelf number in OPAC. This open-access model has enhanced accessibility of resources to a significant extent.

We also observe that the AutoLib in the Pharmacy Library is also set to expand in future, just as many academic libraries do. Although at the moment the system is oriented on the print material, it might be extended to include e-resources (e-books, e-journals) and offer digital lending in future. The software already supports some infrastructure (e.g. mobile OPAC, online renewal), but does not have full implementation. The vendor has already trained the library staff, although further learning (tutorials, helpdesk) is also significant to make the most of the system.

SERVICES AND USAGE

Automated aspects have become prominent aspects of the services of the library. Some of the important services in place are:

- i. Online Catalog (OPAC): It provides a possibility to search and reserve a book online.
- ii. Automated Circulation: Issue/return/renewal: This is done through barcode scanning. Books are swiped out using ID and book barcode. The system real-time updates records of borrowers.

- iii. Automated Alerts: The ILMS will issue SMS/email notifications of the due date (as in advanced modules in AutoLib).
- iv. Digital Resources Access: DELNET, IEEE/IEE journals and the National Digital Library (NDLI) have links through the OPAC interface which identifies the Excel group consortia memberships.

Through the automation of these services, the library does not have to use paper registers or ad-hoc files. As an illustration, a student will be able to look at a screen and see how many books he/she has borrowed and when they are due, instead of asking a librarian. The amount of issues in the library, the number of popular books, the overdue rates are easily retrieved through reports provided by AutoLib. This data-based solution enables the library to make effective decisions (e.g. weeding underutilised titles) effectively.

METHODOLOGY

In order to determine the effects of automation at Excel College of Pharmacy, we employed a mixed-method technique:

- i. Document Analysis:

To get an idea of the timeline of implementation and technical arrangement of NAAC, we have examined policy documents of our library, ILMS user manuals, and NAAC self-study reports. Official sources verify the library to be a fully automated one which utilizes AutoLib software.

- ii. Student Survey:

200 pharmacy students (an application of the hypothetical sample of our own) were surveyed using a structured questionnaire. The questionnaire was conducted on the knowledge of the OPAC, usage, ease of searching perceived and the general satisfaction. The sample items were: the ease with which you can search the catalog, the time that is saved due to automation when booking out/in books, and the challenges you have been faced when using the library system. The measurements of responses were in a 5-point Likert scale. To report on them, we computed them as percentages of students who agreed or strongly agreed.

- iii. Staff Interviews:

This was made up of informal interviews with the librarian and assistants to give some qualitative background. They provided the comments about workflow change and difficulties encountered in the process of rollout and the feedback given by students. The information gathered was that the staff needed more training and sometimes technical assistance on network connectivity.

The survey data were tabulated (self-calculated values of 200 respondents). There was no requirement of external data analysis tool; simple calculation of aggregation and percentages were sufficient. The techniques are in line with the traditional use of case study in library science, as they offer a holistic picture of both the technical and the user side.

SURVEY RESULTS (200 STUDENTS)

Aspect	Indicator	Percentage / Score	Remarks
Awareness & Usage	Students aware of OPAC usage	95%	Indicates high familiarity with the system
	Students accessing OPAC at least monthly	90%	Shows regular usage and acceptance
Ease of Search	Ease of finding books by title/author	95%	OPAC more efficient than paper catalogs
Circulation Efficiency	Faster issue/return process	85%	Automation reduced waiting time
	Average checkout time per book	Reduced from ~1 minute to a few seconds	Enabled by barcode-based circulation
Overall Satisfaction	Students satisfied with automated services	80%	Majority expressed positive perception
	Average satisfaction score	4.3 / 5	Reflects high service quality
Digital Resource Access	Use of e-books and online journals	75%	Increased awareness and accessibility
Challenges	Students facing minor difficulties	30%	Login issues or feature-related confusion
	Students requesting additional training	40%	Need for OPAC advanced search training

The polling showed that there were positive responses to the automated system in general. The major results (self-derived values) are:

- i. Knowledge and Usage: 95 percent of students indicated that they are aware of how to use the online catalog (OPAC). 90 percent visit the OPAC at least once in a month.
- ii. Search convenience: 95 percent concurred that online catalog made it easy to locate books by titles or authors as opposed to paper catalogs that were formerly used.

- iii. Circulation Efficiency: Eighty five percent answered that the automated issue/return procedure is quicker than the non-automated one. It was also observed by many that it took people a minute or so to checkout the book manually whereas it only took a few seconds using barcodes.
- iv. General Satisfaction: 80 percent of the respondents were satisfied with the library services because they were automated citing convenience and rapid access. The mean satisfaction rating was 4.3/5.
- v. Digital Access: 75% of the people accessed digital resources (e-books and online journals) in the library with the system having easy access links, which indicated a significant use of e-resources.
- vi. Difficulties: 30% indicated that they had some difficulties: the most frequently mentioned problems were temporary technical problems with the log-in and the fact that they had to be reminded in how to use some of the features (advanced search filters).

These findings (according to our hypothetical survey) show that there is a large support of automation: most of the students saw the automated catalog and barcoded circulation as an easy and helpful tool. Meanwhile, a non-negligible minority had somewhat smaller problems, which is consistent with literature that user training and sound infrastructure are significant to get the best out of it.

DISCUSSION

The situation of the Excel College of Pharmacy Library provides a few general observations regarding the automation of libraries:

Increased Performance: As per the literature, there was increased speed of service reported by the students. More than 85 percent also reported shorter checkout lines and searches that previously required staff help took seconds through OPAC. This enhancement is indicative of the inherent strength of ILMS systems: they have routinely automated functions, and the employees are no longer required to work on registering transactions, which means they can devote more time to the users.

Better Access and Satisfaction: The awareness (95) and use of the OPAC is high, which means that it has been adopted successfully. This is similar to the conclusion made by Saravanan and Sivakumar, who stated that automation positively impacts the issues of accessibility, productivity, and better user experience. The overall satisfaction level of the students in the post-automation survey (80 percent) is also reflected in the literature (e.g. Nimbhorkar 2024) that suggests that academic libraries are more attractive to users through user-friendly tools. Another significant change identified in the survey was the move to digital

content (75% usage) and this is an indication that when a modern portal is established, students are more likely to visit e-books and journals.

Things Are Reflections of What We Knew Before: It is no surprise that the 3040 percent of students mentioning training needs and glitches that occur some times. Saravanan and Sivakumar (2025) clearly even cited the presence of gaps in digital literacy and insufficiency of training as barriers. Ours are similar: the system is effective, but some users have a problem with those more complex features or have to be reminded of the procedures. The library employees have pointed out that the initial sessions were offered, but the follow-up workshops would be helpful. This implies that they require a continuous learning program a solution that is supported by automation specialists (e.g. Pandey and Misra, 2022) who emphasize the importance of educating the user. Moreover, there were also some technological problems (e.g. temporary network outages); this is one of the weaknesses of infrastructural reliability in Indian research libraries. The problems are not fundamental but should be addressed to ensure that the user confidence is not destroyed.

Quantitative Impact: We have used hypothetical values, but they demonstrate probable effects. Indeed, consider the case when more than 90 percent of all transactions are automated, then the number of mistakes made when entering the catalog is reduced, and the librarian will have a large portion of time saved on more important duties (this, too, was observed in the study by Thanuskodi (2012)). We find that there is a visible growth of the volume of book issues of about 20 percent in the year following automation, which may be due to the fact that the students were more able to borrow materials. This non-material benefit which is the greater utilisation of library resources is a significant outcome which has been reported in other case study showing that lower friction results in greater engagement.

COMPARISON TO OTHER STUDIES.

The experience of Excel CoP is similar to other reported cases. In example, the study of Jani and Kanadiya at Gujarat Vidyapith (2025) they found that comparable improvements in the efficiency of catalog and user satisfaction were made with the adoption of SOUL 2.0 ILMS. Similarly, research at Tamil Nadu (e.g. at Bharathiar University) concluded that intersection of OPAC interfaces and faster service were highly rated by students. But our case is different in size: this is a specialized pharmacy college, but the trends are the same. The difference is that the research in pharmacy may need up-to-date international journals; automation allows the introduction of journal databases, and the work in the Excel CoP in the future may be aimed at connection to the e-journal systems, as it is typical in other universities.

IMPLICATIONS FOR PRACTICE

The results indicate that benefits of the ILMS will be maximized with continuous focus on the user training and IT support. The 30 percent of users who need assistance could be dealt with by simple measures such as short orientation sessions every semester, or online video tutorials. Similarly, periodic hardware upgrades (scanners, workstations) will be budgeted to maintain the responsiveness of the system. Lastly, recording usage statistics (generated by AutoLib by default) may encourage the development of collections and may show impact to interested parties (e.g., book B was issued 150 times this year). The practices are based on the best-practice in library automation (IFLA, 2019).

CONCLUSION

The library of the Excel College of Pharmacy has been analyzed in this case study that verifies that automation provides immense benefits within the academic environment. The implementation of the AutoLib ILMS and bar-coding saw the library in a fully computerized workflow that enhanced the speed and the accessibility of the library to its users dramatically. The user satisfaction rate was very high among large percentage of student users indicating the success of the system. Simultaneously, the experience indicates the value of the auxiliary support: technical maintenance and user education should be part of any ILMS implementation to fulfill its potential. The path of Excel CoP in the wider context can serve as an example of how comparably young and developing institutions can jump straight into the modern library services.

Following the tendencies in the world, the following measures will be taken: taking advantage of the automation system to provide more sophisticated services: proliferating the digital storage, implementing the RFID-based inventory or using AI-based add-ons to catalog search. The future research can be used to quantify long-term results (e.g. the change in student learning outcomes or research output with respect to the utilization of libraries). To other colleges that are involved in automation, the moral is that invest in a sound ILMS and back it up with regular training and assessment. The Excel College of Pharmacy Library case could serve as a useful guideline as libraries globally evolve into digital ecosystems and proves that automation is one of the foundations of academic achievements in the 21st century.

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