

# **Challenges of Library Automation faced by Chhattisgarh and Madhya Pradesh Polytechnic College Libraries**

**Neelam<sup>1</sup>; Dr. Harish Kumar Sahu<sup>2</sup>**

Research Scholar, SoS in Library and Information Science,  
Pt. Ravishankar Shukla University, Raipur (C.G.) India<sup>1</sup>; Sr. Assistant Professor,  
SoS in Library and Information Science, Pt. Ravishankar Shukla University, Raipur (C.G) India<sup>2</sup>  
*neelammarkande08@gmail.com; harishkumarsahu1974@gmail.com*

## **ABSTRACT**

*This study is aimed at exploring and comparing the level of library automation in polytechnic colleges in Chhattisgarh and Madhya Pradesh. The research seeks to identify similarities and differences in automation levels, infrastructure, and library services between institutions in the two states. A survey research design was used in this study by collecting data from 30 polytechnic colleges, with 15 institutions selected from each state based on their year of establishment. A structured questionnaire was administered to the librarians of the colleges chosen to collect comprehensive information regarding automation practices. The analysis also employed the ANOVA method to determine statistical significance. The results show that there are significant differences in the adoption of library automation between the two states.*

*In Chhattisgarh, 70% of libraries have implemented ILMS, whereas only 10% of libraries in Madhya Pradesh have implemented such systems. Such a huge variation points to a significant divergence in the adoption of more advanced automation technologies in libraries. This study further reveals that the qualifications of librarians have no statistical impact on the challenges faced, the adoption of automation technologies, or the level of satisfaction with library software.*

**KEYWORDS:** Library Management Systems, Automated Library Services, Electronic Library, Electronic Records Management, Free and Open-Source Software (FOSS)

## **INTRODUCTION**

The modernization of educational institutions implies the automation of libraries to enable the efficient provision and accessibility of library resources. The level at which technology adaptation and resource facilitation have occurred is reflected by the considerable divergence in the provision of library automation systems among different

## ***Challenges of Library Automation faced by Chhattisgarh and Madhya Pradesh Polytechnic College Libraries***

polytechnic institutes in the states of Chhattisgarh and Madhya Pradesh. Libraries are quintessential knowledge archives, and one of the greatest contributions they have to offer toward the academic study of students pertains to scholarly resources. Therefore, IMS is integrated into libraries to optimize operations. Traditionally, the library users relied heavily on the assistance of the staff and spent a lot of time in finding information. However, the developments in modern communication technologies have made it possible to automate routine library functions through specialized software, thereby saving much time for both the library personnel and the users (Iqbal, Khan, & Sheikh).

This paper is intended to review the status of library automation in these areas, focusing on the types of automation systems in use, the degree of implementation, and the challenges faced by institutions that are still using manual systems. This study aims to carry out an extensive analysis of existing gaps and promote the advantages of automation to make recommendations on improving library services with the aid of technology.

### **LIBRARY AUTOMATION IN CHHATTISGARH AND MADHYA PRADESH**

#### **Chhattisgarh**

Substantially, library automation has made progress in Chhattisgarh largely due to government initiatives toward modernizing educational infrastructure. Several projects have been undertaken by the state government regarding digitization of library collections, automated management systems, and a provision for financial resources for essential software and hardware procurements. Prominent university libraries like Pt. Ravishankar Shukla University Library, V.V. Rider Library Raipur, and Bilaspur have outstanding holdings. Ravishankar Shukla University, and Indian Institute of Technology Bhilai have embraced these advancements by implementing automated cataloging systems, digital repositories, and providing access to academic resources online. However, issues still exist within the system that include ensuring access to trained people and stable finances to maintain the automation efforts going forward. Madhya Pradesh

#### **Madhya Pradesh**

The state has implemented automation technologies in both public and academic libraries, which have been supported by various government initiatives. Universities like Dr. Harisingh Gour University and Indian Institute of Science Education and Research (IISER) Bhopal has implemented integrated library management systems, digital archives, and electronic resource management platforms to enhance library operations. Additionally, training programs have been introduced to equip library staff with the necessary skills for the effective use of these technologies. Challenges remain in terms of the inadequacy of infrastructure in rural areas and the need for sustained investment in technological upgrades and professional development.

### **AIMS AND OBJECTIVES**

The primary aim of this research is to examine and compare the extent of library automation in polytechnic colleges across Chhattisgarh and Madhya Pradesh.

The specific objectives of the study are as follows:

- ✓ To analyze the similarities and differences in the level of library automation between institutions in the two states.
- ✓ Examine why people use open-source or proprietary libraries for their program development.
- ✓ Key difficulties that managing the implementation and use of library management systems poses.
- ✓ To measure the degree of user satisfaction with the efficiency and effectiveness of automated library services.

## **REVIEW OF LITERATURE**

The work of **Nur Amirah, Nor Sa'adah, and Nurul Aini (2023)** presents an analysis on the integration of the Koha cataloguing module in Malaysian university libraries, in terms of implementation process, challenges, and outcomes. Although the study is quite useful in offering insights into module adoption, it leaves a gap in research: the specific factors that contribute to its successful deployment and utilization in academic library settings. Future studies could focus on the views and experiences of library staff in terms of how the Koha cataloguing module has improved the efficiency of cataloguing processes and resource discovery. Empirical studies that evaluate the module's impact on user satisfaction, metadata quality, and overall cataloguing efficiency would also provide great value in understanding its place in Malaysian academic libraries (Nur Amirah et al., 2023).

**Qasim and Shah (2023)** conducted a study on the state of library automation and the challenges faced by university libraries in Pakistan's Faisalabad Division. Their research is expected to examine the extent of automation, the obstacles encountered during implementation, and its perceived influence on library services. Although these studies provide useful insights, there is still a gap in understanding the specific strategies that university libraries use to overcome these challenges and optimize the benefits of automation. Future studies could investigate approaches such as staff training programs, infrastructure enhancements, and collaborations with technology vendors. Further, empirical studies on the effects of automation on user satisfaction, resource access, and operational efficiency would be useful in assessing the impact of automation in university libraries across the Faisalabad Division (Qasim & Shah, 2023).

**Druskat, Bertuch, and Struck (2023)** discuss the concept of "Research Software-ready Libraries," focusing on the readiness of libraries to support research software and the services, infrastructure, and policies needed for effective integration. Although this study provides foundational insights into this emerging concept, further research is needed to examine the specific challenges and opportunities that libraries face in preparing their collections for research software. Future investigations may consider the perspectives of researchers and library professionals regarding libraries' readiness to facilitate the development, implementation, and dissemination of research software. Moreover, empirical studies about the effects of research software-ready initiatives on research productivity, reproducibility, and scholarly collaboration would be very helpful in figuring out whether these research programs make research more effective and enrich academic communication (Druskat et al., 2023).

## ***Challenges of Library Automation faced by Chhattisgarh and Madhya Pradesh Polytechnic College Libraries***

### **Hypothesis of the study**

**H<sub>01</sub>** there is no significant relationship between qualification and selection and adoption of software, challenges and satisfaction level of librarian.

### **Methodology of the study**

A survey research design was utilized to gather data from 30 polytechnic colleges, with fifteen institutions selected from each state. To obtain comprehensive insights, a structured questionnaire was distributed to librarians at the selected colleges. The questionnaire aimed to collect detailed information on the extent of library automation in polytechnic colleges across Chhattisgarh and Madhya Pradesh, as well as to examine the similarities and differences in automation levels between the two states. Additionally, it sought to explore the factors influencing the choice between open-source and proprietary library software and to identify the key challenges associated with the implementation and usage of library management systems.

To ensure the reliability and validity of the instrument, the questionnaire underwent a pilot study before full deployment. The collected data were analyzed using descriptive statistical methods, enabling the identification of trends and variations in library automation practices between the two states.

### **MAJOR FINDINGS**

This section consists of findings presented through charts and graphs. The mean and standard deviation are also counted and discussed.

**Table 1** Level of Automation

<b>Level of automation</b>	<b>Chhattisgarh</b>	<b>Madhya Pradesh</b>
Completely Automated	01	01
Partially Automated	04	00
Initial stages of Automation	07	05
No Automation at all	03	09
<b>Total</b>	<b>15</b>	<b>15</b>

In **table 1** present's comparative analysis of automation levels among the states of Chhattisgarh and Madhya Pradesh. It categorizes entities into four: fully automated, partially automated, at the initial automation level, and without any automation. The facts reveal that while the two states have only a single entity fully automated, the number of entities in the partially automated (04) and initial automation (07) levels in Chhattisgarh is higher than that of Madhya Pradesh (00 and 05, respectively). Conversely, Madhya Pradesh demonstrates a significantly larger number of entities that are fully non-automated (09) than those of Chhattisgarh (03). This can be understood as the application of automation is well rooted in Chhattisgarh, with Madhya Pradesh falling behind, having more entities that do not utilize automation.

**Table 2** Reason for the Adoption of library software

Reason for the Adoption of library software	Chhattisgarh		Madhya Pradesh	
	Mean	SD	Mean	SD
User-friendliness	3.7	1.1	3.6	0.5
Flexibility	3.7	0.9	3.5	0.9
Re-usability	4.3	1.3	2.9	1.1
Adaptability	4.3	1.2	4.2	0.8
Robustness	4.2	1.0	3.2	0.9
Low cost of purchase	4.0	1.0	3.6	0.9
Low cost of maintenance	3.6	1.5	2.7	1.2
Efficiency of library services	3.2	1.5	3.3	1.3
Unified management	4.4	1.2	2.9	1.0
Stability	3.8	1.3	3.3	1.3
Support model	3.8	1.5	2.8	1.3
Ability to manage privileges and permissions	3.6	1.5	3.8	0.4
Reduces time wastage	3.7	1.4	3.0	1.4
Provides easy access to information resources	3.3	1.4	3.1	1.3
Supports basic and advanced searching using keywords	3.9	1.4	3.9	0.8
Provides effective security measures	3.8	1.5	2.7	1.0
Helps for library stock management	3.7	1.1	3.9	0.8
Notes: Scale 1 = Strongly disagree 2= Disagree 3 = Neutral 4 = Agree 5= Strongly agree				

The **table 2** gives reasons for library software adoption in the Chhattisgarh and Madhya Pradesh states by mean ratings and standard deviations. User-friendliness, flexibility, re-usability, adaptability, and robustness are the most important factors that are involved in the adoption process. The findings show that Chhattisgarh has higher mean ratings in all the factors under study compared to Madhya Pradesh, and differences were significant in re-usability (4.3 vs. 2.9) and robustness (4.2 vs. 3.2), which indicates that Chhattisgarh favors these factors to a larger degree. The findings show that Chhattisgarh and Madhya Pradesh value adaptability and user-friendliness, and Madhya Pradesh is relatively lower on these, especially in re-usability and robustness, which may indicate differences in the performance of software or user experience between the two states.

**Table 3**

Challenges of the use of Library Software	Chhattisgarh		Madhya Pradesh	
	Mean	SD	Mean	SD
Lack of trained personnel	4.2	0.4	4.1	0.5
Difficult to get technical support	3.9	0.8	3.9	0.8
Some software can be easily discontinued	4.0	1.0	4.4	0.9

## **Challenges of Library Automation faced by Chhattisgarh and Madhya Pradesh Polytechnic College Libraries**

Lack adequate documentation	3.8	1.0	4.3	0.8
High maintenance and hidden costs	3.6	1.0	3.9	0.7
It is difficult to migrate bibliographic data	3.5	0.9	4.0	0.8
Not reliable and lacks a warranty	3.8	0.9	3.9	1.3
complex and less user-unfriendly	3.9	0.8	4.1	1.3
Difficult using modules found in LS	4.1	1.2	4.3	1.3
Network problems	3.7	1.4	3.8	1.3
Lack of technical support	3.5	1.5	3.3	1.4
Systems crashing	3.1	1.5	3.1	1.4
Difficult to back up the database	2.8	1.4	3.7	1.4
Difficult to upgrade the system	2.9	1.5	3.3	1.4
Reinstallation	3.5	1.6	3.9	1.4
Difficult in recovering Data	3.5	1.6	3.8	1.5

The **table 3** captures the overall issues faced in the implementation of library software in Madhya Pradesh and Chhattisgarh, as reflected in mean ratings and standard deviations. Dominant issues are the lack of trained staff, technical support accessibility barriers, software discontinuation, inadequate documentation, and maintenance costs. The two states share similar issues; however, Madhya Pradesh shows a higher rating for software discontinuation (4.4 versus 4.0) and documentation inadequacy (4.3 versus 3.8). In addition, database backup (3.7 versus 2.8) and system upgrades (3.3 versus 2.9) are rated more as issues in Madhya Pradesh. These findings suggest that, while both states face serious technical and operational issues, Madhya Pradesh faces more issues in terms of system sustainability and maintenance.

**Table 4** Satisfaction Level

Satisfaction Level	Chhattisgarh		Madhya Pradesh	
	Mean	SD	Mean	SD
Installation	4.0	0.0	3.4	1.4
Database Maintenance and Backups	3.5	1.5	4.1	1.4
Features and Functionalities of Modules	3.2	1.8	4.0	1.2
Customizations and Integrations	4.3	1.2	4.1	1.2
Technical/Community Support	4.4	0.5	4.2	0.8
Upgrades and Enhancements	4.7	0.5	4.1	1.2
Managing Resources	3.7	0.9	4.0	1.2
Design and Coordination of Statistical Reports	3.6	1.5	3.8	1.2
Documentation	4.5	0.8	3.7	1.2
Notes: Scale 1 = Very poor 2= Poor 3 = Good 4 = Very Good 5= Excellent				

The **table 4** also shows the rating of satisfaction by mean ratings as well as their standard deviations relating to the same for Chhattisgarh and Madhya Pradesh. Various parameters that will be measured involve installation, maintaining the database, features, customized options, support, upgrades, resource management, statistical reports,

and documentation. Chhattisgarh compares better in regard to customizations (4.3 vs. 4.1), support (4.4 vs. 4.2), upgrading (4.7 vs. 4.1), and documentation (4.5 vs. 3.7). Conversely, Madhya Pradesh has better ratings in database maintenance (4.1 vs. 3.5) and module functionalities (4.0 vs. 3.2). These results indicate that the users of Chhattisgarh are more satisfied with the adaptability of software, technical support, and documentation, while the users of Madhya Pradesh are more satisfied with database maintenance and module functionalities. The greater satisfaction with customization and upgrades in Chhattisgarh means better flexibility in modifications of the software. The lower rating for database maintenance shows potential problems with data security and backup management in Chhattisgarh and requires further improvements.

**Testing of Hypothesis**

**Table 5** One-way ANOVA based on Qualification (N=30)

Qualification	PhD		MPhil		MLIS		Other		F	p-Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Status of Software Used by Librarian										
Adoption of Library Software	1.50	2.10	0.5	0.75	2.0	2.60	0.8	1.20	0.72	0.5431
Challenges of using library software	0.40	0.50	0.3	0.40	0.5	0.60	0.2	0.35	0.81	0.4725
Satisfaction with Library Software	1.80	2.50	0.7	0.85	3.0	2.80	1.2	1.50	1.05	0.2890

The **Table 4** indicates the results show that the highest percentage of adoption in library software is reported by librarians qualified as MLIS. The lowest is reported by those qualified as MPhil. Likewise, the greatest challenges were experienced by MLIS librarians while the "Other" category experienced the least. Satisfaction was high among MLIS librarians and low for MPhil. None of these differences were statistically significant ( $p > 0.05$ ), and thus qualification level does not affect the adoption, challenges, or satisfaction of software among librarians.

**CONCLUSION**

This study investigated the status of library automation in polytechnic colleges in Chhattisgarh and Madhya Pradesh, the findings indicate that Chhattisgarh and Madhya Pradesh generally have a positive experience with library software. However, there is a variation in the degree of satisfaction from one aspect to another. For instance, users from Chhattisgarh report higher satisfaction in terms of customizations, technical support, upgrades, and documentation, meaning that the software in this region is more adaptable and well-supported. On the other hand, Madhya Pradesh users have rated database maintenance and module functionalities higher, suggesting better performance in data handling and software features. Overall, the findings indicate that although Chhattisgarh enjoys robust support services and flexibility, it lags in database management, which may affect long-term usability. In contrast, Madhya Pradesh has an advantage in database maintenance but needs to improve customization and support to improve user experience. These findings indicate that both states need targeted improvements to optimize software performance and ensure efficient library management systems.

**REFERENCE**

- [1] Iqbal, M., Khan, M. K., & Sheikh, A. (2023). Use of software for automation of academic libraries in Sialkot. *Information Discovery and Delivery*, 51(4). <https://doi.org/10.1108/IDD-08-2022-0081>
- [2] Zh. B. Egeubaeva, & A. K. Alzhanov. (2023). AUTOMATING LIBRARY PROCESSES USING THE OSS. *Bulletin of Toraihyrov University. Pedagogics Series*, 2.2023. <https://doi.org/10.48081/qkoz7457>
- [3] Druskat, S., Bertuch, O., & Struck, A. (2023). Towards Research Software-ready Libraries. *ABI Technik*, 43(3). <https://doi.org/10.1515/abitech-2023-0031>
- [4] Corrado, E. M. (2023). Proprietary and Open-Source Software Systems in Libraries: A Few Considerations. *Technical Services Quarterly*, 40(3). <https://doi.org/10.1080/07317131.2023.2226434>
- [5] Nur Amirah, S. A. S., Nor Sa'adah, M. N., & Nurul Aini, N. Y. (2023). A study on the implementation of Koha cataloguing module in Malaysian academic libraries. *Malaysian Journal of Library and Information Science*, 28(1). <https://doi.org/10.22452/mjlis.vol28no1.5>
- [6] Qasim, M., & Shah, M. A. (2023). A Research on the Status and Challenges of Library Automation in the University Libraries of Faisalabad Division, Pakistan. *Journal of Social Sciences Review*, 3(1). <https://doi.org/10.54183/jssr.v3i1.174>
- [7] Jaiswal, G. K., & Negi, D. S. (2023). A study on library automation status among the selected degree college libraries in Gorakhpur, U.P. *Journal of Library and Information Communication Technology*, 12(1). <https://doi.org/10.5958/2456-9399.2023.00003.2>
-