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An Evaluation of Technological Readiness and Obstacles in Library Computerization in Western Vidarbha

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Abstract

Purpose: This study investigates the challenges encountered by library professionals during the computerization of college libraries in Western Vidarbha, India.

Methodology: A descriptive survey was conducted across 151 NAAC-accredited college libraries affiliated with Sant Gadge Baba Amravati University.

Findings: While core services such as OPAC (98.68%) and Circulation (86.09%) are highly computerized, administrative services like Acquisition (60.93% not computerized) and Inter-library Loans (73.51%) remain underdeveloped. Barriers include the lack of user-friendly LMS, shortage of trained staff, and inadequate manpower.

Implications: These issues hinder the transformation of college libraries into fully automated information centers.

Originality: This study adds value by focusing on challenges in resource-constrained, semi-rural regions of India, offering data-driven strategies to bridge automation gaps.

Keywords

Library Computerization; College Libraries; Western Vidarbha; Library Professionals; ICT Challenges; Library Management Systems

Introduction

India’s higher education sector has seen substantial expansion, with over 1,100 universities and nearly 45,000 colleges (AISHE, 2021–22), significantly contributing to the nation's intellectual and economic development. As the focus of education shifts from traditional classroom instruction to self-directed learning and research-based inquiry, libraries play a pivotal role in supporting the evolving academic environment by facilitating access to diverse and dynamic information resources.

However, the demands placed on academic libraries have grown rapidly due to the explosion of scientific information and the advent of information and communication technologies (ICT). Traditional library practices are no longer sufficient to meet user expectations in this digital era. To stay relevant and effective, college libraries must transition to fully computerized systems that streamline core operations such as acquisition, cataloguing, circulation, and serials management, thereby improving service delivery and reducing manual workload.

Despite national efforts and the availability of various Library Management Systems (LMS), many college libraries in regions like Western Vidarbha continue to operate in partially automated or manual modes. Dr. Yogendra Singh (2003) aptly compared this dual existence to "bullock carts slowing down cars," capturing the technological disparity that persists within the

Indian library system. Factors such as limited funding, inadequate infrastructure, and a shortage of trained staff continue to hinder complete automation. This creates a gap between policy intent and on-ground reality, which adversely affects research output and academic efficiency.

While previous studies have largely focused on assessing automation levels or evaluating software systems, there is a lack of research identifying the specific **challenges faced by library professionals** during the computerization process, especially in resource-constrained regions. This study aims to fill that gap by examining the practical barriers to automation in college libraries of Western Vidarbha. It seeks to offer actionable solutions that can help improve the implementation of automation, ultimately strengthening the support role of libraries in higher education.

Review of Literature

The automation of library services has been a significant area of academic interest over the past two decades, reflecting the ongoing transformation of library operations through information and communication technologies. Various studies have explored the implementation and evaluation of library management systems (LMS) in India, focusing primarily on software features, adoption status, and user satisfaction.

Lihitkar (2011) emphasized the pressing need for computerization in libraries to manage the increasing volume of information resources. His study evaluated widely used library software in India based on data collected from ten software developers. The analysis focused on comparing the software packages in terms of features, facilities, and services, leading to a ranking system that categorized them by functionality. Similarly, Ghosh (2011) conducted a comparative analysis of automated serial control systems in seven Indian Institutes of Technology (IITs). The study adopted a layered approach, examining processes such as acquisition, cataloguing, binding, back volume management, financial operations, and electronic resource management, thus highlighting both the strengths and limitations of the automation systems in place.

Rai (2011) focused on the comparative capabilities of different library software, particularly emphasizing web-compatible features and their role in enhancing the technological performance of libraries. Anas (2014) investigated the impact of automation in four management institutes in Aligarh, assessing user satisfaction and automation levels. The study found that 75% of libraries were only partially automated, largely due to inadequate funding and a shortage of skilled personnel.

Madhusudhan (2016) developed a structured checklist to evaluate the functional capabilities of integrated library management systems, ranking them based on features and services while also calling for continuous improvements to meet user expectations. In a related study, Bachhav (2016) examined the status of library automation in a selected region, identifying the major obstacles encountered by professionals, including infrastructural constraints and lack of administrative support.

Ansari (2018) concentrated on the acquisition modules of LMSs in central university libraries across North India. The study not only assessed the technical features of acquisition systems

but also incorporated library staff perspectives, offering insight into operational challenges. Uraon (2018) provided a practical guideline for automating the periodicals section using Koha LMS, based on implementation at Rabindra Library, Assam University. The study offered a visual walkthrough of serial control modules using actual database screenshots, making it a valuable case-based contribution.

Despite these contributions, a critical gap remains in the literature. Most existing studies have focused on the technological features, adoption levels, or comparative evaluations of library software. However, relatively few have investigated the **real-world challenges** faced by library professionals, particularly in under-resourced regions. Furthermore, little attention has been given to identifying **which specific functions of college libraries remain non-automated**, or the institutional and infrastructural constraints that impede full-scale computerization. This study aims to address these gaps by exploring the **ground-level barriers** faced by library professionals in Western Vidarbha and suggesting practical interventions to support sustainable automation in college libraries.

Objectives

1. Assess the current status of library automation in Western Vidarbha's college libraries.
2. Identify key challenges faced by library professionals during automation.
3. Evaluate library staff's preparedness for managing automated systems.

1. **To suggest suitable strategies and recommendations for overcoming the challenges in the automation process**

Data Analysis and Interpretation

This study employs a descriptive survey method, common in library and information science, to collect primary data. The survey targeted 200 NAAC-accredited college libraries affiliated with Sant Gadge Baba Amravati University in Western Vidarbha (Amravati, Akola, Buldhana, Washim, Yavatmal). Data were collected from 151 libraries using structured questionnaires to assess automation status, challenges, and staff preparedness.

Table 1 presents the distribution of the types of colleges surveyed. The majority are grant-in-aid institutions (80.13%), followed by non-granted colleges (18.54%) and government colleges (1.32%). This reflects the structural composition of higher education institutions in the Western Vidarbha region

Table 1 : Frequency Distribution of Colleges by Type of Institution

Type of Institution	No. of Institutions	%
Government	2	1.08
Gran-in-Aid	121	81.08
Non-Granted	28	17.84
Total	151	100

The cross-tabulation in Table 2 shows that 68.21% of college libraries have collections ranging between 5,000 and 20,000 volumes. Grant-in-aid colleges tend to have moderate to large

holdings, while government colleges have comparatively fewer institutions but larger collections. Non-granted colleges exhibit a more varied distribution.

Table 2: Cross-Tabulation of Library Collection Size by Type of Institution

Institution Type	<5,000	5,000–10,000	10,000–20,000	>20,000	Total
Government	0	0	1	1	2
Private	2	5	12	9	28
Aided	20	40	45	16	121
Total	22	45	58	26	151

Table 3: Usage of LMS among College Libraries

ILMS	No of Colleges	%
e- Granthalaya	11	7.28
KOHA	5	3.31
LIBMAN	23	15.23
LIBSOFT	19	12.58
LIBSYS	6	3.97
SLIM-21	5	3.31
SOUL	71	47.02
Other (Local)	11	7.28
Total	151	100

Table 3 indicates that SOUL is the most widely used LMS, deployed in 47.02% of the surveyed libraries. LIBMAN (15.23%) and LIBSOFT (12.58%) also show considerable usage. Other systems like e-Granthalaya, KOHA, SLIM-21, and LIBSYS each account for smaller percentages, indicating a preference for centrally supported LMS platforms

Figure 1. Distribution of LMS Used by College

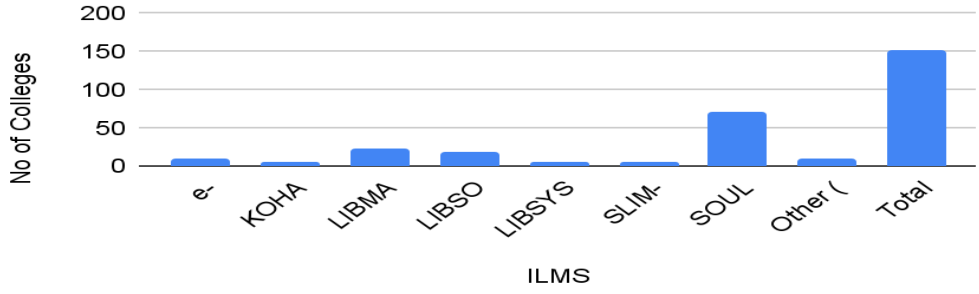

Table 4: Status of Computerization by Library Operation

Library Operation	Status of Computerization			Total
	Not Computerized	Partially Computerized	Fully Computerized	
Acquisition	92	45	14	151
%	60.93%	29.80%	9.27%	100.00%

Cataloguing	2	48	100	150
%	1.33%	32.00%	66.67%	99.34%
Circulation	1	20	130	151
%	0.66%	13.25%	86.09%	100.00%
Serials Control	87	49	15	151
%	57.62%	32.45%	9.93%	100.00%
OPAC	0	2	149	151
%	0.00%	1.32%	98.68%	100.00%
Inter-library Loans	111	20	20	151
%	73.51%	13.25%	13.25%	100.00%
User Account Management	69	34	47	150
%	46.00%	22.67%	31.33%	99.34%
Inventory Management	16	72	64	152
%	10.53%	47.37%	42.11%	100.66%
Bar code for Stock Verification	22	47	82	151
%	14.57%	31.13%	54.30%	100.00%
Report Generation	0	21	130	151
%	0.00%	13.91%	86.09%	100.00%
Reference Support	108	23	20	151
%	71.52%	15.23%	13.25%	100.00%
Digital Resource Access	86	14	51	151
%	56.95%	9.27%	33.77%	100.00%
Database Creation	80	13	58	151
%	52.98%	8.61%	38.41%	100.00%
Theft Detection	98	13	40	151
%	64.90%	8.61%	26.49%	100.00%

The analysis in Table 4 demonstrates significant variation in the computerization of library operations. Functions directly related to user services, such as OPAC (98.68%), Circulation (86.09%), and Report Generation (86.09%), are mostly computerized. Conversely, operations such as Inter-library Loans (73.51% not computerized), Reference Support (71.52%), and Acquisition (60.93%) remain under-automated, reflecting operational disparities and possible resource or training gaps.

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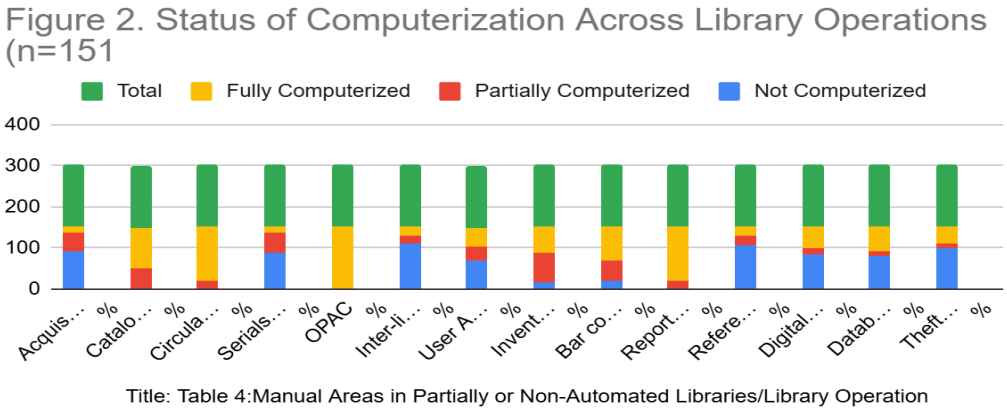

Table 5: Barriers to Library Computerization

Challenge	No. of Responses	Rank
Non-availability of user-friendly and suitable LMS	98	1
Lack of computer trained library staff	82	2
Lack of Manpower	72	3
Lesser usage of library services by users	71	4
Paucity of Funds	35	5
Unfavorable attitude of college management	24	6
Lack of IT knowledge on the part of the user	21	7
Lack of required infrastructure	5	8
Total	408	

As shown in Table 5, the most cited barriers to full automation are the lack of user-friendly LMS (98 responses), inadequate staff training (82), and manpower shortages (72). Financial limitations and low user engagement follow, while fewer responses pointed to poor infrastructure or management attitudes, suggesting these are less common concerns.

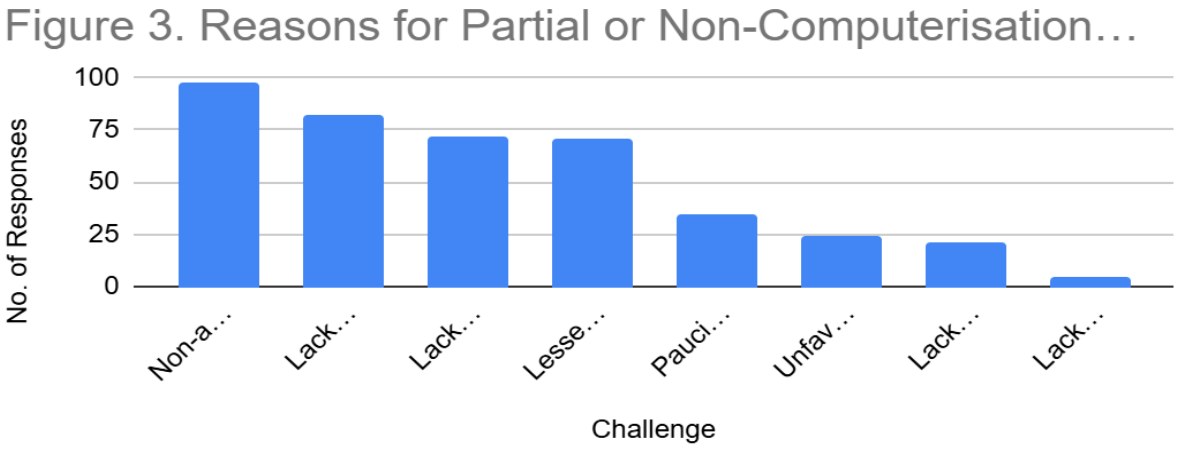

Table- 6 Computerization Training Status for College Library Staff

Table 6 highlights a concerning trend: 87.33% of college libraries have only 1–2 trained staff members, with just 2.67% reporting more than five trained personnel. A small but critical 3.33% of libraries lack trained staff altogether, posing a significant barrier to automation sustainability.

Training Status	Number of Libraries	Percentage (%)
None	5	3.33%
1–2	131	87.33%
3–5	10	6.67%
More than 5	4	2.67%
Total	150	100.00%

Table- 7 Staff Confidence in Using LMS Features (Arranged by Mean Score)

Rank		Mean Score	Confidence Level
1	Circulation	4.25	Very High Confidence
2	OPAC	4	High Confidence
3	Cataloguing	4	High Confidence
4	Report Generation	3.89	Moderately High Confidence
5	Database Creation	3.67	Moderate Confidence
6	Bar Code for Stock Verification	3.39	Moderate Confidence
7	User Account Management	3.34	Moderate Confidence
8	Inventory Management	3.31	Moderate Confidence
9	Acquisition	2.97	Low Confidence
10	Serials Control	2.89	Low Confidence
11	Reference Support	2.6	Low Confidence
12	Digital Resource Access	2.25	Very Low Confidence
13	Inter-library Loans	2.01	Very Low Confidence

Staff Confidence in LMS Use-As seen in Table 7, staff confidence is highest in Circulation (Mean = 4.25), followed by OPAC and Cataloguing (Mean = 4.00 each). Confidence decreases significantly in more technical modules like Digital Resource Access (2.25) and Inter-library Loans (2.01), suggesting areas requiring targeted training.

Figure 4. Staff Confidence in Using LMS Features"

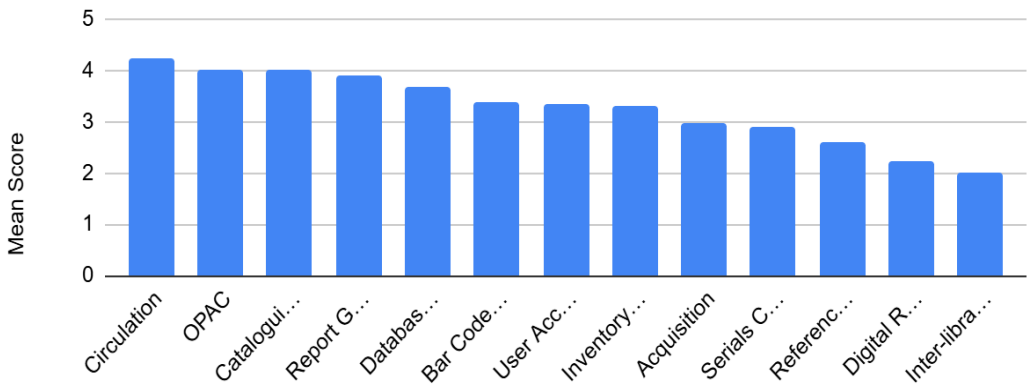

Table 7. Staff Confidence in Using LMS Features

Table 8: Preferred Strategies to Improve Library Automation

In Table 8, respondents identified user-friendly software interfaces (35.5%) and regular staff training programs (27.6%) as the most critical strategies to enhance library automation. These were followed by technical support from vendors (13.2%), sufficient manpower (11.8%), and increased funding for infrastructure (10.5%). The adoption of open-source LMS such as KOHA (1.3%) received the least preference among respondents. The findings emphasize the importance of both human and technical solutions for achieving sustainable progress in library automation.

Rank	Strategy for Improvement	Number of Times Selected	Percentage of Total Selections (%)
1	User-friendly software interfaces	135	35.50%
2	Regular staff training programs	105	27.60%
3	Technical support from vendors	50	13.20%
4	Sufficient Manpower	45	11.80%
5	Increased funding for infrastructure	40	10.50%
6	Adoption of open-source LMS (e.g., KOHA)	5	1.30%
	Total Selections	380	100.00%

Key Findings and Suggestions

Key Findings

1. **Automation of Core Functions**: Most libraries have automated core user services such as OPAC (98.68%) and Circulation (86.09%), reflecting a strong focus on front-end operations. **Limited Computerization of Administrative Modules**: Critical backend functions like Inter-library Loans (73.51%), Reference Services (71.52%), and Acquisition (60.93%) remain largely manual, indicating uneven automation.
2. **LMS Usage Patterns**: SOUL is the most commonly used LMS (47.02%), with limited adoption of open-source systems like KOHA (3.31%).
3. **Barriers to Automation**: Key challenges include lack of user-friendly LMS (98 responses),

limited trained staff (82), manpower shortage (72), and low library usage (71), while infrastructure and management support were less frequently cited.

4. **Training Gaps and Confidence Levels**: A majority (87.33%) of libraries have only 1–2 trained staff. Staff exhibit high confidence in Circulation and OPAC but low confidence in modules like Digital Access (2.25) and Inter-library Loans (2.01).
5. **Preferred Improvement Strategies**: Respondents favored user-friendly software (35.5%) and regular staff training (27.6%) as top priorities, followed by vendor support and manpower enhancement.

Suggestions

1. **Enhance Staff Training**: Continuous skill development programs are essential to improve competence in underused LMS modules.
2. **Adopt User-Centric LMS Solutions**: Selection of LMS should focus on ease of use, adaptability, and support for local needs.
3. **Close Functional Gaps via Modular Automation**: Phased automation of less computerized areas like acquisitions and digital access is recommended.
4. **Promote Open-Source Adoption with Support**: Wider use of platforms like KOHA should be encouraged with appropriate technical and training support.
5. **Strengthen Institutional Backing**: Management must invest in infrastructure, manpower, and policy support for successful automation.
6. **Foster Collaboration**: Regional networking and resource sharing can address limitations and improve service reach.
7. **Implement Periodic Evaluation**: Regular assessment of automation progress can help identify gaps and guide improvements.

References:

1. **Lihitkar, S. R.** (2011). Evaluation of library software packages in India: A comparative study. *DESIDOC Journal of Library & Information Technology, 31*(3), 196–202. https://doi.org/10.14429/djlit.31.3.1081
2. **hosh, M.** (2011). Comparative study of automated serials control systems in IIT libraries. *Annals of Library and Information Studies, 58*(4), 319–327.
3. **Rai, N.** (2011). Comparative performance of library automation software packages in Indian academic libraries. *Journal of Library and Information Science, 36*(2), 115–124. **Anas, M.** (2014). Automation of libraries in management institutes of Aligarh: A study. *International Journal of Information Research, 4*(1), 90–96.
4. **Madhusudhan, M.** (2016). Evaluation of library management systems in university libraries in India. *Library Hi Tech, 34*(1), 65–84. https://doi.org/10.1108/LHT-04-2015-0033\
5. **Bachhav, N. B.** (2016). Status of library automation and networking in colleges of Ahmednagar district: A study. *International Journal of Digital Library Services, 6*(1), 105–117.

   Ansari, M. A. (2018). Acquisition modules of integrated library management systems in Indian university libraries: A comparative study. *Library Philosophy and Practice (e-*

journal), 1903. https://digitalcommons.unl.edu/libphilprac/1903

6. **Uraon, P.** (2018). Implementation of KOHA for serial control in Rabindra Library, Assam University: A practical guideline. *Library Progress (International), 38*(1), 69–78. **Singh, Y.** (2003). Information technology and libraries: Challenges ahead. *IASLIC Bulletin, 48*(3), 121–130.
7. **All India Survey on Higher Education (AISHE).** (2022). *AISHE Report 2021–22.*
8. Ministry of Education, Government of India. https://aishe.gov.in