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Library Software Packages and Their Purposes in a Changing Environment: A Cross-Sectional Web-Based Survey

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ABSTRACT

Introduction*: The rapid proliferation of digital technologies has necessitated the widespread adoption of intelligent electronic systems across virtually all expanding industries. Academic and public libraries are no exception. They've undergone systematic, significant transformation by integrating automation, digitization, and content management solutions, all aimed at delivering enhanced, value-added services to their users. Despite this growing trend, a comprehensive understanding of the specific software ecosystems adopted by library and information centers in urban contexts remains limited.*

Methods: *This study aims to investigate and critically analyze the diverse library software packages currently deployed within library institutions across Chennai city. A structured web-based survey was employed 0ver the sixteen academic and public libraries as the primary data collection instrument, through which systematic observations were conducted across the official websites of selected library establishments. Comparative analyses were subsequently undertaken to examine the conceptual frameworks and contextual applications of both technical and user-facing services rendered by the surveyed libraries, with reference to the software packages under examination.*

Results*: The findings reveal that the majority of library and information centers surveyed predominantly utilize Koha (7) and AUTOLIB (4) as their library automation platforms, DSpace (9) as the prevailing institutional repository solution, and Drupal (4) and WordPress and Blogger two each as their content management system of choice.*

Discussion: *These results suggest a discernible pattern of preference toward open-source and cost-effective software solutions among Chennai city libraries, reflecting broader global trends in library digitization. The widespread adoption of Koha and DSpace underscores the growing institutional emphasis on interoperability, scalability, and community-driven development in library information systems. Future research may explore user satisfaction, implementation challenges, and the long-term sustainability of these platforms within the Indian library ecosystem.*

KEYWORDS: Library Automation, Digital library, Web-based survey, Software packages.

INTRODUCTION

Library software for building automated library, digital library and web publishing are the concepts possible only after advent of information and communication technologies in to the human information need and retrieval. This software are classified as open and proprietary, now a day's libraries are mainly using free and open-source software (FOSS) for automating its day-to-day activities, Dspace for constructing digital library and Drupal as content management software. The scarcity of finance, skilled human resource makes libraries think about open-source software as its prepared library management system. The evolving library ecosystem periodically upgrade itself in terms of collection, infrastructure and technology, thought inevitable constrains of budget and human resources adequately. Modern libraries adopt to the Artificial Intelligence to accelerate its day-to-day functions like classification and cataloguing systematically. But, the attribution to the technological attachments and finance, many small libraires, particularly public libraries encounter lack of basic library automation and Digital Library infrastructure still. Owing to this situation, this specific study is an eye opener to the Library and Information Community to understand the current status of the libraries on Library Software, more specifically automation, digital library and content management software initially.

OBJECTIVES

- ✓ To explore the status of the library software on selected libraries
- ✓ To study the popularity and significance of the library software
- ✓ To present current trends and strategies on digital infrastructure of libraries
- ✓ To Identify the features and accomplishments of libraires on library software

LITERATURE REVIEW

This section is devoted to a comprehensive survey and critical examination of the existing body of literature pertinent to the subject under investigation, wherein the relevant scholarly works are subjected to a rigorous analytical and evaluative assessment to establish a well-founded theoretical and empirical basis for the present study.

Balaji Babu and Krishnamurthy (2013) investigated the library automation for resource discovery and its challenges in evolving technological era, it is been considered one of the earliest studies on library automation and discovery services. This study listed out various search tools and strategies across the information centers over the year and pointed out the web-scale discovery services for unified access and interoperability systematically though enlisting web-scale discovery service providers and its products features. **Moruf and Dangani (2020)** investigated the significant influence of technology on library systems, highlighting the adoption and implementation of diverse software applications across various functional dimensions of library services. Their study identified seven principal categories of library-relevant software, namely: **Bibliographic Citation Management Software**, which encompasses tools such as EndNote, ProCite, Reference Manager, and BibTeX for organizing and formatting scholarly references; **Classroom Management Software,** including platforms such as Alma, Classter, iTunes U, ClassDojo, GoGuardian, and LanSchool, designed to facilitate instructional administration and learning environment

monitoring; **Electronic Copyright Management Systems (ECMS)**, comprising solutions such as TM Cloud, Bynder, RightsManager, Red Points, and PatSnap for governing intellectual property rights in digital contexts; **Electronic Resource Management (ERM) Software**, available across commercial solutions such as Verde, EBSCONET, and 360 Resource Manager, open-source alternatives including CORAL, CUFTS, and ERmes, as well as institutionally developed systems such as HERMES at Johns Hopkins University and VERA at the Massachusetts Institute of Technology; **Instructional System Design Software**, encompassing authoring and screen capture tools such as Adobe Captivate, Articulate Storyline, Camtasia, and Snagit for the production of digital instructional content; **Integrated Search Software**, including Algolia Site Search, Swiftype, and various Microsoft Bing API solutions aimed at enhancing multi-format information retrieval; and **Library Automation Software,** represented by a broad range of Integrated Library Systems (ILS) such as Koha ILS, SirsiDynix Symphony, Destiny Library Manager, and Lucidea, collectively supporting the streamlining and automation of core library operations across diverse institutional settings. **Ahammad (2024)** systematically examined the existing body of knowledge related to sustainable library services facilitated by open-source library automation and digitization software through the literature retrieval from PubMed, Scopus, Web of Science, and Library and Information Science Abstracts (LISA) databases and they suggested the strategies for the successful adoption of open-source library software vis community support, technical expertise, user adoption etc. **Krishnamurthy and Awari (2013)** conducted a study on the application of Open-Source Software (OSS) in library environments, systematically categorizing the available tools into three principal domains, namely: Library Integrated Management Software, which encompasses platforms such as Koha, NewGenLib, Evergreen, OpenBiblio, OPALS-NA, AvantimicroLCS, ABCD, WEBLIS, PhpMyLibrary, GLIBM (GNU Library Management System), BiblioteQ, and Java Book Cataloguing System, all of which are designed to streamline and automate the core operational functions of library management; Content Management Systems, including widely adopted platforms such as Joomla, Drupal, WordPress, Mambo, TYPO3, and DotNetNuke, which facilitate the efficient organization, administration, and dissemination of digital content within library web environments; and Institutional Repository or Digital Library Software, comprising solutions such as GSDL, DSpace, Ganesha, Fedora Commons, E-Print, CDS Invenio, Dienst, and VoDL, which collectively support the creation, preservation, and open-access dissemination of institutional scholarly output and digital collections. **Husain and Ansari (2007)** discussed the salient features of selected cataloguing modules of popular three library automation software (Alice for Windows, Libsys and Virtua) and further they elisted the uniqueness of the libsys software interms of availability of authority files, thesaurus constructions, marc and non-mark format data migration etc. **Ramesh Babu et al (2015)** analysed the major academic and public libraries in Chennai for the products, services, Networks and Digitization process etc., **Tyagi and Senthil (2015)** depicted the library automation in India on perspectives of services to the users upon software and hardware for hosting this service either through local hosting and cloud computing etc. **Kondamudi and Saroja (2025)** examined libraries of 24 ICSSR-funded research institutions to find out the status of its collection, infrastructure and digitization etc. Findings proved that 13 libraries are implemented Digital Library Software and 24 libraries having Integrated Library Management System (ILMS). Out of 24 libraries using ILMS, Koha (8) occupy major portion followed by Libsys (7) and SOUL (3).

METHODOLOGY

This study is adopted purely web-based observation and authentication method so as to inspect the selected sixteen libraries through its websites and along with many literature and newsletters were discussed during time, the main criteria adopted are enlisting the current statues and utility of library automation software (Open-Source Software, Proprietary and Inhouse software), Digital Library Software (DLS), and Content Management Software (CMS) as and when visited (through web) during this study period and updated periodically.

LIMITATIONS

Since it is web-based online survey by observation and enunciation of the status of the software available at libraries chosen for this study, there is a possibility to vary in list due to updating and adaptation latest software since this study took some significant time from observation to publications. This study is only focused on the list of software not ranking of the software and libraries accordingly. Some libraries transformed form previous ILMS to Koha over a period and it may vary from the status of the software and some has implemented DLS and CMS over this period.

SELECTION OF LIBRARY MANAGEMENT SOFTWARE

Selection of library management software (LMS) is not a simple task due to changing factors like market share, support and expertise availability. Sometimes librarians go with either renowned software on the city view and sometimes based on their budget outlay of the institution to the library. While examining and evaluating the software to his/her library, librarian must have the followings information about the software's specifications which might help to select the right software for housekeeping operations as well as information services to the user community precisely.

- Product quality and authenticity
- Features and configurations
- Staff training and support service
- Operating system and compatibility to various plug ins
- Hardware and software requirements
- Functionality: Modules are available, value addition to existing functions
- User interface: Navigation, error alerts, intuitive, customization
- Conforming to standards: MARC, Z39.50, ISO-2709, etc.
- Scalability: Single user-multi use network. Can it be used in client server LAN architecture or fully web browsing architecture
- Reports that help take decisions
- Security levels
- Migration of data or data transfer
- Multilingual cataloguing, information retrieval facility etc.

TYPES OF LIBRARY SOFTWARE PACKAGES

Beyond integrated systems, library software further encompasses Digital Library Management Systems, which are specifically designed to organize, preserve, and provide access to digital resources. Additional categories include Learning Management Systems (LMS) and Content Management Systems (CMS), each serving distinct institutional and pedagogical functions. Given the breadth of available platforms, it is recognized that different library software packages exhibit varying functional architectures and operational capabilities, necessitating careful evaluation and strategic selection in accordance with the specific service objectives of the institution.

ANALYSES AND INTERPRETATION

Table 1: Institute wise analyse of Library Software (ILMS, DLS and CMS)

S. No	Libraries In Chennai	Automation Software	DL/IR Software	Web Publishing Software
1	IIITDM Kancheepuram	Koha	Dspace	NF
2	Roja Muthiah Research Library	Koha	Dspace	WordPress
3	Tamil Nadu Veterinary and Animal Sciences University Library	Koha	Dspace	NF
4	Anna University Library	AUTOLIB	NF	Dreamweaver
5	Sri Ramachandra Medical University Library	AUTOLIB	NF	NF
6	Madras University Library (MUL)	SOUL	NF	TYPO3
7	IMSc Library (Chennai)	Koha	Dspace	Drupal
8	SRM University Library	Inhouse software	Dspace	Drupal
9	IITM Library	Virtua	Dspace	Drupal
10	CSIR-SERC Library	Koha	Dspace	Drupal
11	Anna Centenary Library	Koha	Dspace	Blogger
12	National Institute of Fashion Technology Library	e-Granthalaya	NF	NF
13	AMET University Library	AUTOLIB	Dspace	WordPress
14	CIPET Library, Chennai	NewGenLib	NF	NF
15	St. Joseph's College of Engineering	AUTOLIB	NF	Inhouse
16	Connemara Public Library	Koha	NF	Blogger

Table 1 explains the status of the library software on the selected libraries in Chennai accordingly: Integrated Library Automation System (ILMS), Digital Library System (DLS) and Content Management System (CMS). Out of sixteen selected libraries, seven libraries adopted to Koha library automation software and nine libraries implemented DSpace as its Digital Library System and there is a varying software for web-publishing at the libraries but Drupal stands first with four counts followed by WordPress and Blogger two each.

Frequency Tables of ILMS, DLS and CMS

Table 2: ILMS Frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AUTOLIB	4	25.0	25.0	25.0
	e-Granthalaya	1	6.3	6.3	31.3
	Inhouse software	1	6.3	6.3	37.5
	Koha	7	43.8	43.8	81.3
	NewGentlib	1	6.3	6.3	87.5
	SOUL	1	6.3	6.3	93.8
	Virtua ILS (VTLS)	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

Table 3: DLS Frequency Table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dspace	9	56.3	56.3	56.3
	NF	7	43.8	43.8	100.0
	Total	16	100.0	100.0	

NF: Not Found

Table 4: CMS Frequency Table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Blogger	2	12.5	12.5	12.5
	Dreamweaver	1	6.3	6.3	18.8
	Drupal	4	25.0	25.0	43.8
	Inhouse	1	6.3	6.3	50.0
	NF	5	31.3	31.3	81.3
	TYPO3	1	6.3	6.3	87.5
	WordPress	2	12.5	12.5	100.0
	Total	16	100.0	100.0	

Table 2-4 depicts the frequency positions of the three software, predominantly Koha occupy first place in ILMS with 7 counts, followed by AUTOLIB 4 and all other stands with each one. Under Digital Library System, only DSpace is seen with 9 counts out of all sixteen institution and other seven institution yet to implement the same. The content management software Drupal stands with 4 counts followed by Blogger 2 and WordPress 2. These three tables has been created with the help of SPSS package.

FINDINGS

This webometric study quantifies the number of free and paid library software in use at cities popular libraries at Chennai. Obviously, Public Libraries are comfortable with Koha Open-Source Software due to budgetary issues felt at every public sector in the State and Union Government in India comparatively, though with rich financial support at major central and state libraries they are gradually moving from proprietary software to Koha due to ubiquity and Koha community support and easiness to adopt and accelerate library automation. Since the necessities almost all academic libraries have used DSpace Digital Library Software, except some central institutions and private colleges, but web publishing software are unanimously observed at all libraries.

CONCLUSION

Libraries serve as pivotal information hubs, fulfilling the ever-growing information needs of users across academic and research institutions, while public libraries bear the additional responsibility of catering to a significantly larger and more diverse user base simultaneously, particularly in major metropolitan cities like Chennai. Library automation has emerged as a transformative force, streamlining the routine operational workflows of library personnel while facilitating seamless information discovery and retrieval for end users. Although Artificial Intelligence (AI) has increasingly dominated the landscape of information search, retrieval, and technical processing-further augmented by generative AI methodologies and customized machine learning applications-the foundational infrastructure of library automation and digitalization remains an indispensable cornerstone for both librarians and users alike, yielding reciprocal benefits across all stakeholder groups.

The present study investigates the current operational status of major libraries within the selected city, with particular focus on their adoption and implementation of Integrated Library Management Systems (ILMS), Digital Library Solutions (DLS), and Content Management Systems (CMS). The findings reveal a commendably high level of efficiency and proficiency among the surveyed institutions in these domains. Notably, all three public libraries demonstrated exceptional competence in library automation and MARC cataloguing practices, thereby ensuring precise and efficient resource discovery services alongside expedited circulation operations.

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