Library and Information Science Research in India: Trends, Challenges, and Future Directions

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Abstract

Library and Information Science research in India has experienced significant growth over the last few decades. The discipline has evolved from traditional studies on library management and classification to advanced research in digital libraries, bibliometrics, information literacy, knowledge management, artificial intelligence, and data analytics. Indian researchers have contributed to the development of LIS literature through scholarly publications, doctoral research, and collaborative projects. This paper examines the growth of LIS research in India, major research trends, challenges faced by researchers, and future opportunities. The study highlights the increasing importance of technology-driven research and the need for greater collaboration and innovation within the LIS profession.

Keywords: LIS Research, Research Gap, Review Methodology, India, Bibliometrics, Information Literacy, Research Trends

Introduction

Library and Information Science research is important because libraries nonstop transformation in response to new forms of information, technologies, and user expectations. Research helps librarians understand these changes and develop services that are useful, accessible, and responsive to students, teachers, researchers, and other users. In the Indian context, LIS research has a broad academic and professional role. Libraries support teaching, learning, research, and lifelong learning in universities, colleges, research institutions, public libraries, and special libraries. Therefore, research in LIS is not limited to administration. It also covers information behaviour, scholarly communication, digital resources, information literacy, knowledge organization, technology applications, and evaluation of library services. The growth of higher education and research institutions has increased demand for reliable information services. At the same time, users increasingly expect quick access to electronic journals, databases, e-books, institutional repositories, and online services. These developments have created new research questions about access, usability, user satisfaction, digital preservation, information literacy, and effective management of electronic resources. The present paper provides an overview of the growth and major trends of LIS research in India. It also discusses commonly used research methodologies, major challenges, and future directions. The purpose is to present a clear picture of the changing nature of LIS research and identify areas in which Indian researchers can make further contributions. Library and Information Science, for short, deals with how we collect, organize, store, locate, and share information. In India, this field has grown and changed quite a bit over the years when it comes to both education and research. Dr. S. R. Ranganathan's stands out as a key figure here. His Five Laws of Library Science and the Colon Classification system changed how people think about libraries. Like any academic subject, research plays a huge role in moving Library and Information Science forward. Indian LIS research has led to better library services, improved information systems, deeper user studies, and smarter ways to organize digital resources. New technologies like ICT, digital libraries, and artificial intelligence have opened up fresh research paths in this field. That said, a lot of existing studies on Indian Library and Information Science research tend to focus on things like how many papers get published, citation trends, which journals are popular, and what topics researchers choose. These studies offer helpful data, but they don't always show how research findings actually address the real problems libraries face or what users truly need. On top of that, some work only looks at particular databases, certain journals, or short time frames. So there's room for a wider examination that ties research trends together with the methods used, how libraries operate day to day, what users expect, and the issues that haven't been solved yet. This paper tries to fill that gap by looking at where LIS research in India stands right now, its main areas of focus, the methods researchers rely on, the big challenges, and what lies ahead. It also offers a simple framework to guide researchers toward meaningful questions and studies that could genuinely improve library services across India.

Research Gap

People have studied Indian Library and Information Science research from all sorts of angles—how many papers get published, who cites whom, which journals cover what, and popular topics here or there. That's important, but let's be honest: relying on just one database, a short time frame, or a few journals barely scratches the surface. Just counting published papers doesn't tell

us if the research actually helps library services or tackles real issues for users and institutions. If we really want a complete picture, we need to tie together the research themes, the methods people use, what's actually happening inside Indian libraries, and the problems nobody's solved yet.

This paper tries to do just that. It brings research trends, methodology choices, institutional challenges, and fresh directions into one big conversation. Unlike most studies, it doesn't give you fresh bibliometric datasets or a giant list of every Indian LIS article out there. Instead, it offers a broad framework—something researchers can use to spot the questions that matter and build sharper, more focused studies going forward.

Methodology for Review

The paper takes a narrative approach, meaning it summarizes and discusses published work about Indian Library and Information Science research—covering things like research growth, bibliometric studies, digital libraries, information-seeking behavior, information literacy, ICT applications, research methods, the hurdles institutions face, and where research could go next. It's not a systematic review, not a meta-analysis, and definitely not an original bibliometric investigation.

Where did the material come from? The review draws on the sources cited in the manuscript, along with other relevant literature on Indian LIS research. That includes articles from LIS journals, studies examining research output, publication patterns, and topic trends. The manuscript doesn't lay out a step-by-step breakdown—you won't find a database-by-database search log, search strings, search dates, or a screening protocol here. Those details just weren't part of the process. If someone wants to do a systematic review down the line, they should keep track of which databases they searched, the time periods, keywords, how they got rid of duplicates, and how many articles made the cut at each stage.

How did they choose and organize the literature? Anything that focused on LIS research in India or closely related to the development of Indian libraries was fair game. The discussion sorts this material by topic, considers the goals and value of each area, and points out their limits. If the manuscript doesn't give numbers to back up a trend, it's flagged as more of a general impression than a measured fact. So, this paper offers a wide lens, but doesn't tell you how often or how high each research topic ranks.

Growth of Library and Information Science research in India

The development of Library and Information Science education has provided an important foundation for research in India. Universities and higher education institutions have established LIS departments and programmes at different levels. The availability of postgraduate and doctoral programmes has created a continuing group of researchers who investigate problems related to libraries, information services, users, and information systems.

Doctoral research has been particularly important in expanding the knowledge base of LIS. PhD theses examine specific library environments, user groups, information resources, technologies, and management practices. Journal articles and conference papers further communicate the results of these studies to the professional community. The growth of research output has also encouraged the use of quantitative indicators for studying scholarly communication. Bibliometric and Scientometric studies help researchers examine publication productivity, authorship, citations, collaboration, keywords, and research themes. Such studies have themselves become an important part of Indian LIS research. The growth of LIS research has not been uniform. Differences in institutional resources, research guidance, access to databases and software, and opportunities for collaboration influence research capacity. Strengthening research support across institutions can help reduce these differences and improve the overall quality of Indian LIS research. LIS education in India has expanded significantly, with universities and higher education institutions offering Bachelor's, Master's, M.Phil., and PhD programmes in Library and Information Science. Research output has increased steadily through journal publications, conference proceedings, dissertations, and doctoral theses. Studies indicate that Indian LIS research has shown continuous growth, particularly during the last two decades, although the growth has varied across institutions and regions.

Research analyses have shown that collaborative authorship is increasing, indicating a shift from individual research to team-based investigations. Multi-authored research articles now represent a major share of LIS publications in India.

Major Research Trends in India

Researchers in India have explored all sorts of topics in Library and Information Science. Mittal (2011) highlighted things like library services, user studies, cataloguing, bibliometrics, digital libraries, and open access. A few years later, Dora and Kumar (2017) noticed a rush toward bibliometric studies and tech-focused subjects. When Paul and Maity (2023) looked over doctoral theses, they saw a clear swing toward computer applications and tech-heavy fields. Gupta and Gul (2022) spotted similar shifts, pointing out a growing interest in new and emerging issues as well. These studies are given us a sense of where Indian Library and Information Science research is heading. But honestly, just counting papers or listing hot topics doesn't tell us much about whether this work actually helps libraries, solves real problems, or meets users' needs. To get the full picture, you need to look at what kinds of research methods people use, see how those choices affect life in libraries, and figure out what's missing or still needs work. Another important feature of current Library and Information Science research is the increasing connection between technology and user-centered services. Researchers are not only studying whether a technology is available but also how it affects access, usability, staff work, and user satisfaction. This approach can make research findings more useful for practical library development.

1.Bibliometric and Scientometric Studies

Bibliometric and Scientometric research provides a systematic way of examining scholarly communication. Indian LIS researchers use publication and citation data to identify productive authors, institutions, journals, subjects, collaboration patterns, and influential publications. Keyword analysis can also reveal emerging themes and changes in research interests over time. The popularity of this area is partly related to the availability of bibliographic databases and digital publication records. Researchers can collect publication data and apply quantitative techniques to identify patterns. However, careful selection and cleaning of data are important because differences between databases can affect results. Bibliometric studies are useful for research evaluation and collection development, but they should not be treated as the only measure of research quality. Citation counts and publication numbers need to be interpreted in relation to disciplinary differences, publication practices, and the context of individual research fields. Bibliometric research has become one of the most popular areas in Indian LIS research. Researchers use bibliometric techniques to analyze publication patterns, citation impact, authorship trends, research productivity, and collaboration networks. Several studies have identified bibliometrics as the dominant research area among Indian LIS scholars.

2 Digital Libraries and Institutional Repositories

Digital libraries have changed the way scholarly information is stored, preserved, searched, and accessed. Research in India examines digitization practices, metadata, digital preservation, repository development, open access, and user access to electronic collections. Institutional repositories are important because they can provide organized access to the scholarly output of universities and research institutions. Research may focus on the types of documents deposited, user access, metadata quality, repository policies, and factors affecting participation by faculty and researchers. Further studies can examine long-term preservation of digital objects, interoperability between repositories, accessibility for users with different needs, and the effectiveness of digital library interfaces. Creating a digital collection does not by itself guarantee that users will discover, understand, or use the information effectively. The development of digital libraries and institutional repositories has attracted considerable research attention. Studies focus on digitization, digital preservation, metadata standards, open access initiatives, and repository management. Indian universities and research institutions increasingly use digital platforms to improve access to scholarly information.

3 Information-Seeking Behaviour

Information-seeking behaviour research studies how people recognize information needs, search for information, select sources, evaluate results, and use information. In India, studies have involved students, teachers, researchers, professionals, and other user groups. The increasing availability of electronic resources has made information-seeking behaviour more complex. Users may combine library databases, search engines, institutional repositories, e-journals, e-books, websites, and other sources. Researchers therefore need to understand not only which sources are used but also why users select particular sources and what difficulties they experience. Such studies can directly support library service improvement. Findings can guide user education programmes, database training, reference services, website design, collection development, and information literacy initiatives. Research on information-seeking behaviour examines how users search for, access, and utilize information resources. Indian researchers have conducted studies involving students, faculty members, researchers, and professionals to understand

information needs and improve library services. Information-seeking behaviour remains one of the most active areas of LIS research.

4 Information Literacy

Information literacy is closely connected with the ability to function effectively in an information-rich environment. Research in this area considers users' abilities to identify information needs, locate appropriate resources, evaluate information, and use information responsibly. In higher education, information literacy programmes can support students and researchers in using scholarly databases, evaluating online information, avoiding unreliable sources, and understanding appropriate information use. Research can evaluate the effectiveness of training programmes and identify differences in information skills among different groups of users. Further research can examine information literacy in relation to lifelong learning, digital learning environments, academic research, and changing patterns of information consumption. Information literacy research focuses on developing users' abilities to identify, evaluate, and use information effectively. With the growth of digital information resources, information literacy has become essential for academic success and lifelong learning.

5 Library Automation and ICT Applications

Automation has become a major component of modern library operations. Research has examined integrated library management systems, online catalogues, circulation systems, serial control, acquisition, RFID, cloud-based services, mobile access, and other ICT applications. ICT research is not limited to technology adoption. Researchers also study user acceptance, staff skills, implementation barriers, cost, training, service quality, and the impact of technology on library workflows. These human and organizational factors are essential for successful technology implementation. Libraries need to evaluate technologies according to their actual service needs rather than adopting technology only because it is new. Research can help institutions compare systems, identify practical requirements, and develop sustainable technology strategies. Information and Communication Technologies (ICTs) have transformed library operations. Research in this area includes library automation, integrated library management systems, cloud computing, RFID technology, mobile library services, and artificial intelligence applications in libraries.

6 Knowledge Management

Knowledge management research examines how organizations create, share, store, and use knowledge. Libraries have an important role because librarians organize information and support the sharing of knowledge within academic and research communities. Studies in this area can focus on knowledge-sharing practices among library staff, organizational learning, institutional knowledge repositories, documentation of professional experience, and the role of librarians in supporting knowledge creation. Knowledge management also provides opportunities for interdisciplinary research involving management, education, and information studies. Knowledge management has emerged as an important research area in recent years. Studies examine knowledge sharing, organizational learning, knowledge repositories, and the role of libraries in supporting knowledge creation and dissemination.

7 Artificial Intelligence and Emerging Technologies

Recent Library and Information Science research increasingly examines artificial intelligence, machine learning, Chatbots, data analytics, and intelligent information retrieval systems. These technologies can influence search, recommendation, reference assistance, classification, metadata generation, and other library activities. Technology-oriented research should also consider practical and ethical issues. Questions of accuracy, transparency, privacy, information security, staff training, user trust, and responsible use are important when new technologies are introduced into information services. Because technology changes rapidly, LIS researchers need to combine technical understanding with user-centered evaluation. The most useful research will examine whether a technology actually improves access, discovery, learning, or service quality.

Recent LIS research increasingly focuses on artificial intelligence, machine learning, Chatbots, data analytics, and intelligent information retrieval systems. These technologies are reshaping library services and creating new opportunities for research and innovation.

Research Methodologies Used in Library and Information Science Research

Research methodology determines how a research problem is investigated and how evidence is collected and interpreted. Indian LIS researchers use both quantitative and qualitative approaches. Survey research is particularly common because it allows researchers to collect information from a defined population through questionnaires and other structured instruments. Bibliometric and citation analysis are appropriate when the objective is to study publication and citation patterns. Case studies

are useful for detailed examination of a particular library, institution, system, or user group. Content analysis can be used to examine documents, websites, publications, or other information objects. Experimental approaches may be used when researchers need to compare the effects of different interventions or systems. Qualitative methods such as interviews and observation can provide deeper information about user experiences, professional practices, and organizational issues. Mixed-method research can combine numerical evidence with detailed qualitative findings and may provide a more complete understanding of complex LIS problems. Good LIS research requires a clearly defined research problem, suitable objectives, an appropriate population or sample, reliable data collection instruments, systematic analysis, and ethical research practices. Researchers should select methods according to the research question rather than simply following the most commonly used method. Indian LIS researchers employ a variety of research methods. Survey research remains the most widely used methodology, followed by bibliometric analysis, citation analysis, case studies, content analysis, and experimental research. Recent studies show that quantitative methods dominate LIS research, although qualitative and mixed-method approaches are becoming increasingly common.

Common data collection techniques include:

- Questionnaires
- Interviews
- Observation
- Citation analysis
- Document analysis
- Web analytics

These methods help researchers understand user behaviour, evaluate library services, and analyze scholarly communication patterns.

Challenges in Library and Information Science Research in India

Library and Information Science research in India faces many challenges. These challenges affect the quality and usefulness of research. One major problem is that some studies use only one database, a few journals, or a short period of time. As a result, they may not show the complete picture of LIS research in India. Other problems include limited research funding, poor digital facilities in some libraries, a lack of trained staff, and unequal access to electronic resources, especially in rural areas. Many studies focus on the number of published papers and citations, but less attention is sometimes given to the actual problems faced by librarians and library users. There is also a need to improve research methods and collect information from different types of libraries. In the future, researchers should use different methods, such as surveys, interviews, case studies, and direct observation. More attention should be given to user satisfaction, information needs, digital literacy, library services, and staff training. Research should also cover public libraries, college libraries, rural libraries, and libraries in less-studied areas. Universities, libraries, and research organisation should work together to improve the quality of LIS research. Future research should not only count published papers but also examine how research can solve library problems, improve services, and meet the information needs of users. In this way, LIS research can make a greater contribution to the development of libraries in India. The development of LIS research has been accompanied by several challenges. These challenges affect the ability of researchers to conduct large-scale, innovative, and high-quality studies.

Another challenge is the need to connect research findings with practical library development. Research is most useful when findings are communicated clearly and can be applied to improve services, resources, technology, or user support. Stronger links between LIS departments and working libraries can therefore increase the practical value of research.

Despite significant progress, LIS research in India faces several challenges:

1 Limited Research Funding

Limited funding can restrict access to specialized databases, research software, field surveys, travel, data collection, and research assistance. Smaller institutions may face greater difficulty in supporting projects that require substantial resources. Greater availability of competitive research grants, institutional research support, and collaborative projects can help researchers undertake broader and more systematic studies. Many LIS departments have limited access to research grants and financial support, restricting large-scale projects and advanced research activities.

2 Inadequate Research Infrastructure

Research infrastructure includes access to scholarly databases, statistical and bibliometric software, reliable internet services, digital resources, computing facilities, and appropriate research spaces. Gaps in infrastructure can limit the scope and quality of research. Institutions can strengthen infrastructure through shared resources, library consortia, training programmes, and collaborative research arrangements. Better access to research tools can also support researchers who are beginning to use advanced quantitative and qualitative methods. Some institutions lack access to high-quality databases, software tools, and digital research resources necessary for conducting advanced studies.

3 Publication Quality Issues

The growth of predatory journals creates a serious challenge for research quality and academic integrity. Researchers may face pressure to publish and can become vulnerable to journals that provide inadequate peer review or unclear editorial practices. Researchers should carefully check journal reputation, peer-review practices, indexing information, editorial transparency, publication policies, and ethical standards before submitting manuscripts. Academic institutions also have an important role in developing awareness of responsible publication practices. The growth of predatory journals presents a challenge for maintaining research quality and academic integrity. Researchers must carefully select reputable journals for publication.

4 Limited International Collaboration

International collaboration can expose researchers to new methods, research questions, datasets, and professional perspectives. Although collaboration is increasing, opportunities for sustained international partnerships remain limited in comparison with some other disciplines. Joint projects, co-authored publications, conferences, research networks, and academic exchange programmes can strengthen international visibility and encourage the sharing of research expertise. Although collaboration is increasing, international research partnerships remain relatively limited compared to other disciplines. Greater global collaboration can improve research quality and visibility.

5 Need for Advanced Research Skills

Modern Library and Information Science research increasingly requires skills in research design, statistics, bibliometric tools, data analysis, visualization, digital scholarship, and emerging technologies. Researchers who lack these skills may find it difficult to address complex research problems. Regular training and continuing professional development can help researchers improve their methodological competence. Universities and professional associations can contribute through workshops, short courses, research clinics, and collaborative learning programmes. Researchers require training in advanced research methodologies, data analytics, artificial intelligence, and digital scholarship to address emerging information challenges.

6.Future Directions of Library and Information Science Research in India

The future of LIS research will be shaped by changes in technology, scholarly communication, education, and information behaviour. Researchers have opportunities to study both emerging technologies and continuing problems of access, quality, equity, preservation, and user support. Research data management is an important developing area because researchers increasingly create and use large amounts of digital data. LIS professionals can contribute to data organization, metadata, preservation, access policies, and support for responsible data sharing. Open science and open access provide significant research opportunities. Studies can examine institutional policies, researcher attitudes, barriers to open publishing, repository use, and the accessibility and sustainability of open scholarly resources.

Information ethics and privacy are becoming increasingly important as libraries provide more digital and personalized services. Research can examine privacy awareness, responsible handling of user data, information security, ethical use of information, and the balance between service personalization and user privacy.

Digital humanities and semantic web technologies provide opportunities for interdisciplinary LIS research. Librarians can support digital collections, metadata creation, linked data, discovery systems, and the preservation and interpretation of cultural and scholarly resources. Smart libraries and intelligent information systems can also be examined from a user and service perspective. Research should consider accessibility, usability, sustainability, staff readiness, cost effectiveness, and measurable improvements in service quality. Future LIS research in India should increasingly focus on real-world problems and measurable outcomes. Instead of concentrating only on descriptions of library facilities or user opinions, researchers can examine the effectiveness of services, compare interventions, and develop evidence-based recommendations.

Greater collaboration among Library and Information Science departments, libraries, universities, technology experts, and researchers from other disciplines can further strengthen the field. Such collaboration can help Indian Library and Information

Science research address complex information problems and increase its contribution to the global knowledge society. The future of Library and Information Science research in India appears promising. Emerging research areas include:

- Artificial Intelligence in libraries
- Big data analytics
- Research data management
- Digital humanities
- Open science and open access
- Block chain applications in libraries
- Semantic web technologies
- Information ethics and privacy
- Smart libraries and intelligent information systems

Recent academic collaborations and institutional partnerships are also strengthening LIS education and research opportunities across India. To remain relevant in the digital age, Library and Information Science researchers must embrace interdisciplinary approaches and adopt innovative technologies that support knowledge creation and information access.

Conclusion

Library and Information Science research in India has developed from traditional studies of library organization and management into a broad and interdisciplinary research field. The growth of digital resources and ICT applications has expanded research into digital libraries, information behaviour, information literacy, bibliometrics, knowledge management, and emerging technologies.

The review also indicates that methodological development is important for the future of the discipline. Surveys remain widely used, but bibliometric analysis, case studies, qualitative methods, and mixed-method approaches provide opportunities for more detailed and meaningful research. Major challenges include limited funding, inadequate infrastructure, publication quality concerns, limited international collaboration, and the need for advanced research skills. Addressing these challenges will require support from universities, libraries, professional associations, research organizations and individual researchers.

The future of Indian Library and Information Science 0research is promising. By focusing on user needs, evidence-based practice, interdisciplinary collaboration, responsible technology use, open scholarship, information ethics, and innovative research methods, Indian LIS scholars can strengthen the discipline and contribute to the development of an inclusive and knowledge-based society. Library and Information Science research in India has made substantial progress over the years. The discipline has expanded from traditional library management studies to advanced research in digital technologies, information behaviour, bibliometrics, and artificial intelligence. Bibliometric studies, information-seeking behaviour, digital libraries, and ICT applications remain dominant research areas. Although challenges such as limited funding, infrastructure constraints, and publication quality issues persist, the future of LIS research in India is bright. By promoting collaboration, innovation, and technology-driven research, Indian LIS scholars can make significant contributions to the global knowledge society.

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