

Advanced Library and Information Science (LiS)

Trends, Technologies & Smart Professional Practices



Editors

Akshay Kumar

Qumar Abbas

Surender Kumar

Seema Saini

Shefali Goswami



Advanced Library and Information Science (LiS)

Trends, Technologies & Smart Professional Practices

Editors

Akshay Kumar

Qumar Abbas

Surender Kumar

Seema Saini

Shefali Goswami



BMS PUBLISHING HOUSE

**B-1214, SHRI RAMESHWAR BHAWAN, 2ND FLOOR, SHASTRI NAGAR,
NEW DELHI - 110052 (IN FRONT OF INDIAN POST OFFICE)**

Email – printsbms@gmail.com / publishbms@gmail.com

Ph - 011 20838505, M - 7011047207

Website : www.bmsgroup.in

Copyright © 2026 by BMS PUBLISHING HOUSE

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law. For permission requests, write to the publisher, addressed "Attention: Permissions Coordinator," at the address below".

The views expressed in this book are those of the Authors, and not necessarily that of the Publisher, Chief Editor, and the Editors. The Publisher, Chief Editor and the Editors are not responsible for the views of the Authors and authenticity of the data, in any way whatsoever.

BMS Publishing House

B-1214, Shri Rameshwar Bhawan, 2nd Floor, Shastri Nagar,

New Delhi -110052 (in Front of Indian Post Office)

Email – publishbms@gmail.com

Website – www.bmsgroup.in

Ordering Information:

Quantity sales. Special discounts are available on quantity purchases by corporations, associations, and others.

For details, contact the publisher at the address above.

Please contact Tel: (+91) 011- 20838505, Mob- +91-7011047207

ISBN-978-81-992075-9-2

Price :- Rs. 2300.00 (India)

US\$ 150.00 (Outside India)

Printed & Published by Bhawana M Kumar on behalf of BMS Publishing House in INDIA

CONTENTS

<i>Preface</i>	iii
<i>Acknowledgement</i>	iv
<i>Foreword</i>	v-vii
<i>Messages</i>	viii-xiii
1. Big Data Applications in Libraries <i>Dr. Joel Osei-Asiamah</i>	1-8
2. Leveraging IOT for Enhanced Library user Engagement <i>Zihadur Rahman</i>	9-15
3. Librarians' Job Burnout Syndrome: Signs and Solutions <i>Dr. Adeyemi Adewale Akinola</i>	16-24
4. Beyond Boundaries: Unlocking Collective Intelligence through Smarter Digital Infrastructure in Libraries <i>Prof. A. Suryanarayana, Akshay Kumar</i>	25-35
5. Assistive and Augmented Devices for Inclusive Education: A Conceptual Study of Visually Challenged Students <i>Prof. (Dr.) Shushma Rani, Dr Vinod Kumar</i>	36-45
6. Role of Modern Academic Libraries in Research Productivity: A Study <i>Dr. Sunil Kumar Satpathy</i>	46-52
7. Innovating Public Library Services: Knowledge Portals as Self-Service Technology Platforms <i>Dr. Deepak Kumar Shrivastava, Dr. Prashant Bhardwaj</i>	53-65
8. An Analysis of Libraries in Higher Education (Universities) in Jaipur, Rajasthan, Accredited by the NAAC <i>Dr. Kamlesh Maharwal, Dr. Nirmala Saini & Dr. Qumar Abbas</i>	66-72
9. A Scientometric Analysis of Meenakshi Academy of Higher Education and Research (Maher) Deemed to be University - Research Productivity Using The Scopus Database (2014 – 2023) <i>Akshay Kumar, Shefali Goswami, Dr. Nand Kishor & Neema Shukla</i>	73-83

10. **Role of Artificial Intelligence in Strengthening Governance of Public Libraries: A Study of the North-East Region of Kota** 84-95
Dr. Prashant Bhardwaj, Dr. Deepak Kumar Shrivastava
11. **Digitization Practices and Preservation of Cultural Heritage** 96-101
Dr. Sharddha Kalla, Ms. Seema Kumari & Mr. Nandan Singh
12. **Implementation of Big Data in Indian Academic Libraries** 102-111
Dr. Pradyumna Kumar Panigrahi
13. **E-Libraries and National Education Policy (NEP) (2020): A Catalyst for Transforming India's Education System** 112-119
Dr. Surender Kumar, Dr. Sangeeta
14. **Technology Integration in Libraries** 120-126
Dr. Sandhya Pagare
15. **Mapping Scholarly Impact: Citation Analysis of Commerce Doctoral Dissertations at Maharshi Dayanand University, Rohtak** 127-137
Dr. Seema Saini
16. **Changing user Behaviour in the AI Era: Implications for Library and Information Science** 138-143
Dr. Dinesh G. Rathod
17. **(User's Study of Physics Department Students) Use of Central Library by the Students of Physics Department** 144-155
Sangeeta Tandia
18. **Research Output of the IP Indian Journal of Library Science and Information Technology from 2019-2023: A Bibliometric Study** 156-169
Manoj Kumar, Rakhi Khatik
19. **Strategic Implementation of Open Source Software for Transforming Library Services in the Digital Era** 170-183
Rajinder Kaur
20. **Developing 21st-Century Librarian Competencies for School Librarians: Challenges And Opportunities** 184-193
Suresh Saini, Prabhat Kumar

21. **Content Analysis of Library Websites of Select Business School in Bengaluru: A Study** 194-201
M S Vinay
22. **Users' Perception on Marketing of Information Resources and Services in Medical Engineering and Pharmacy College Libraries in Maharashtra State** 202-211
Yogesh S. Kantale, Dr. Vaishali P. Gudadhe
23. **Awareness and Uses of Library Resources (LR) Among Faculty Members (Teaching And Non Teaching Staff) of the Central Library, Jai Minesh Adivasi University, Ranpur, Kota: A Case Study** 212-220
Shefali Goswami, Akshay Kumar & Aayushi Soni
24. **Level of Experts in ICT Knowledge and Skills Among Lis Professionals in Deemed and Private Universities in Karnataka: A Study** 221-234
Ningappa, Prof. Dr. T. D. Kemparaju
25. **Electronic Theses and Dissertations Repositories in India: Ugc And Shodhganga Initiative** 235-242
Anil Choudhary, Dr. Santosh Gupta
26. **Use of Open Access Resources by the Students of IMS SUM Hospital Bhubaneswar: A Study** 243-253
Rupashree Dhar, Akshay Kumar
27. **Information Professionals Contribution to the Development of Altmetrics in the Modern Digital Age** 254-262
Vinayak Savatagi, Umesha Naik
28. **Information Literacy and Lifelong Learning** 263-274
Dr. Joel Osei-Asiamah
29. **The Role of Health Libraries in Patient Engagement and Health Literacy** 275-284
Sandhya Pagare
30. **QR Code Applications to Library Services: Implementation of QR Code in MMCHRI Medical College Central Library** 285-294
Chandran Velmurugan, Dr. R. Palani

31.	Digital Transformation in Libraries, Archives, and Information Centres in the Advent of Information Technology <i>Dr. Subhasish Karak</i>	295-310
32.	Library Automation and Technology <i>Vikrant Kumar</i>	211-318
33.	Algorithmic Literacy: Redefining Information Literacy in the age of Generative AI <i>Mayank Jain, Richa, Adeeba Bano & Saurav Kumar</i>	319-325
34.	Quality Education in the age of 21st Century and Skill Development: The Key of the Changing world <i>Jitamoni Bhattacharyya, Ajoy Kumar Dey</i>	326-331
35.	Leveraging Big Data Analytics for enhanced user Experience in Modern Libraries: a Theoretical Approach <i>Dr. Ekta Singh, Dr. Bhuvan Chittoria & Mr. Ashish Lodhi</i>	322-341
36.	Professional Skills and Competencies in the 21st Century: A Framework for Workforce Effectiveness and Employability <i>Dr. Akanksha Rajora, Dr. Nikita Maheshwari & Dr. Bhuvan Chittoria</i>	342-349
37.	Strategic Leadership in Libraries: Driving Innovation and Sustainability in the Digital Era <i>Dr. Akanksha Rajora, Dr. Bhuvan Chittoria & Mr. Megh Raj Meena</i>	350-363
38.	VIVO as an Ontology Driven Research Information Management System: Architecture, Capabilities, and Strategic Role in the Scholarly Ecosystem <i>Manish Sharma</i>	364-374
39.	Applications, Trends, and Prospects of Artificial Intelligence (AI) in Library Systems and Services <i>Dr. Anil Kumr Jharotia, Ankit Awasthy</i>	375-386
	<i>List of Contributors</i>	387-391
	<i>About the Book</i>	392

DIGITIZATION PRACTICES AND PRESERVATION OF CULTURAL HERITAGE

Dr. Shraddha Kalla

Librarian, IIHMR University, Jaipur, Rajasthan

Mr. Seema Kumari

Assistant Librarian, IIHMR University, Jaipur, Rajasthan

Mr. Nandan Singh

Assistant Librarian, IIHMR University, Jaipur, Rajasthan

Abstract

India possesses a vast array of significant social heritage assets, both tangible and intangible. India is the largest repository of manuscripts, with an anticipated 5 million ancient texts. Later in the innovation section, more explicit indications of Vedic science will be provided. Following the shift from the past, innovation has separated itself from art and transformed into an element of science. Today, science fuels innovation in modern India just as it does in other current societies. Additionally, numerous other social assets can be found in various documents and galleries across India. The safeguarding of these assets was never a priority, resulting in significant assets either vanishing or departing from India. A method for the preservation of its physical asset was never investigated. Similarly, the concepts of enhanced protection were introduced in India recently, notably at some time in 2008 specifically. Advanced safeguarding is a process of preserving both digital and conceptual digital content for a distant future in a reusable state for access by its users. It encompasses numerous effective guidelines, strategies, methods, advancements, and practices. The outdated mechanical quality, reduced and questionable lifespan of modern storage media, data overflow, and internet disruption are some of the key factors that have complicated and challenged the preservation of digital information

Keywords: *digitization, digital preservation, cultural heritage, OAIS, metadata, standards*

Introduction

To explore the topic of innovation and its role in Indian culture, we must first consider the essential questions "What is culture?" and "What constitutes Indian culture?" The answer to the first might not be as simple as it seems. Certainly, Webster's Dictionary provides a variety of answers. "Conventions of socializing, myths, advice, rules, traditions, knowledge, skill, research, education, and values," The true essence of culture likely

high-value items. Community engagement is essential for culturally sensitive materials.

Capture & Technical Standards

- **File formats:** Use open, preservation-oriented master formats (e.g., TIFF for still images, WAV/FLAC for audio, uncompressed or lossless for archival masters). Capture at archival quality and produce derivatives for access.
- **3D & complex objects:** For 3D scanning and photogrammetry, follow project-level documentation for capture parameters, coordinate reference, and mesh/texture preservation; store raw sensor outputs alongside processed models. Recent EU projects and handbooks provide tested protocols for 3D capture and quality assurance.

Metadata & Documentation

Preservation depends on rich metadata: descriptive (for discovery), administrative (rights, provenance), technical (capture settings, file checksums), and preservation metadata (fixity information, migration history). Use established schemas (e.g., METS, PREMIS, Dublin Core) and map local fields to community standards.

Storage, Fixity, and Redundancy

Implement an archival storage strategy with multiple geographically dispersed copies, regular fixity checks, and monitored storage health. Cloud services can be used but should be combined with local or consortial preservation copies and explicit SLAs regarding bit-level access and export. The OAIS model's archival storage function offers a blueprint for these responsibilities.

Access, Rights, and Ethical Considerations

Provide tiered access to digital surrogates based on rights and cultural sensitivity. Document permissions and restrictions in administrative metadata. Open access improves research and reuse but must be balanced against legal and community constraints.

Case Studies (Illustrative)

To ground recommendations, three short examples illustrate how different institutions can apply the workflow.

National Library (large institution)

A national library implements centralized workflows adhering to FADGI capture specs for still images, an OAIS-compliant repository for preservation, and Europeana metadata mappings for aggregation and cross-search. They run automated fixity checks nightly and publish high-quality derivatives for public access portals.

Regional Museum (medium institution)

A regional museum focuses on 3D digitization of artifacts. They adopt EUreka3D recommendations for capture and store raw scans plus processed meshes; PREMIS metadata documents provenance and processing steps. For cost control, they partner with a university for storage and expertise.

Community-Led Project (small / grassroots)

A community group digitizes oral histories using portable devices. Emphasis is placed on consent documentation, accessible formats, and depositing copies with a local archive that follows OAIS ingest and preservation policies (even a scaled-down OAIS implementation). Community members retain rights control while granting access for research under agreed terms.

Challenges and Emerging Issues

- **Resource constraints:** Digitization and preservation require ongoing funding and skilled staff; smaller institutions need consortia or cloud options.
- **Technical obsolescence:** File format and hardware changes necessitate active monitoring and migration strategies guided by OAIS principles.
- **3D and complex objects:** These increase storage and documentation needs; standards are still coalescing but practical guides exist.
- **Rights, provenance, and cultural sensitivity:** Ethical stewardship requires formal policies and community collaboration, particularly for indigenous and minority heritage.

Recommendations

1. **Adopt of the OAIS concepts:** Even small organizations should map their repository operations to OAIS functions to clarify their responsibilities.
2. **Use community standards and manuals:** Follow FADGI, Europeana, DPC, and other field-specific guides for capture and metadata.
3. **Planning for lifecycle costs:** Budgeting for storage, staffing, stability testing, and configuration migration. Sustainability is as important as an initial digitization.
4. **Engage communities:** Engage source communities in selection, access policies, and interpretation, and document consent.
5. **Document everything:** Capture technical metadata, workflows, and decision logs to support future storage operations.

Conclusion

Digitization shows both exceptional opportunities and responsibilities. When capture work flow are thoroughly incorporated with standards-based conservation architectures and careful governance, digital substitutes have the potential to provide sustainable, ethical access to cultural heritage. Organizations should incorporate international guidelines such as those from UNESCO, technical standards like OAIS/ISO, and community best practices, including those from Europeana, DPC, and FADGI, to create sustainable programs tailored to their unique collections and communities.

References

1. Baro, E.E. Oyeniram, K.G. and Ateboh, B. (2013) "Digitization projects in university libraries in Nigeria: the journey so far" *Library Hi Tech News*, No. 9, pp.21-26.
2. Becker, C. Faria, L. And Duretec, K. (2014). "Scalable decision support for digital preservation" *OCLC Systems and Services*, Vol. 30 No. 4, pp.249-284.
3. Bote, J., Fernandez-Feijoo and Ruiz, Silvia (2013). "Digital preservation cost: a cost accounting approach". *The Learning Organization*, Vol. 20 No. 6, pp.419-432.
4. Bradeley, K. (2014). "Built on sound principles: audio management and delivery at the National Library of Australia" *IFLA Journal*, Vol. 40 No. 3, pp.186-194.
5. Chen, C. (2004), "Global Memory Net: potential and challenges for archiving and sharing cultural and heritage resources" paper presented at International Conference on Digital Libraries, 24-27 Feb., New Delhi, India.
6. Chmielewska, B. and Wrobel, A. (2013). "Providing access to historical documents through digitization" *Library Management*, Vol. 34 No. 4/5, pp. 324-334.
7. Crane, G. Wuffman, C.E. Cerrato, L.M. Mohoney, A. Milbank, T.L. Mimno, D. Rydberg-Cox, J. A. Smith, D.A. and York, C. (2003), "Towards a cultural heritage digital library" paper presented at 3rd ACM/IEEE-CS Joint Conference on Digital Libraries, June, Houston, TX, available at: <http://perseus.mpiwg-berlin.mpg.de/Articles/jcdl2003.pdf> (accessed 18 May 2016).
8. Federal Agencies Digital Guidelines Initiative (FADGI). *Technical Guidelines for Digitizing Cultural Heritage Materials*.
9. Belhi, A., Bouras, A., & Foufou, S. (2017, December). Digitization and preservation of cultural heritage: The CEPROQHA approach. In *2017 11th International Conference on Software, Knowledge, Information Management and Applications (SKIMA)* (pp. 1-7). IEEE.

10. Siliutina, I., Tytar, O., Barbash, M., Petrenko, N., & Yepyk, L. (2024). Cultural preservation and digital heritage: challenges and opportunities. *Amazonia Investiga*, 13(75), 262-273.
11. Bakhshi, S. I. (2016). Digitization and digital preservation of cultural heritage in India with special reference to IGNCA, New Delhi. *Asian Journal of Information Science and Technology*, 6(2), 1-7.

ABOUT THE EDITORS



Mr. Akshay Kumar, Assistant Professor & Doctoral Researcher, is currently working as an Assistant Professor in the Department of Library and Information Science, Faculty of Library and Information Science at Jai Mitesh Advani University, Rangpur, Kota and also working as an Academic Counselor at IGNOU, Regional Centre, Jodhpur. He is also pursuing his Ph.D. at Banasthali Vidyapeeth, Rajasthan. With a profound academic foundation—including an M.Lib.I.Sc., M.Com (B.F.E.), and several specialized postgraduate diplomas like PGORD, PGDEMA, PGDCA and O'Level. Mr. Kumar has notably qualified for the UGC/NTA-NET three times. His scholarly contributions are vast, encompassing over 25 Plus research works- including Research paper, (Conferences, Webinar, Seminar Papers), edited book chapters, Annual research articles, 1 Co-Edited Book, 1 Patent and five co-authored competitive guidebooks. A leader in academic publishing, he serves as a Co-Editor for multiple edited volumes and sits on the editorial boards of prestigious journals such as ISSRR, NRIJITIS, IJLIRMIT, PRUITALS and Bihar Shodh Samagam Journal. He is a Life Member of esteemed bodies like ILA, ASLIP, ALA, JALIS, LPF & LAB. Mr. Kumar remains a dedicated advocate for academic excellence across both traditional and digital learning platforms. Mr. Kumar actively engages in continuous professional development through regular participation in national and international conferences, seminars, and Faculty Development Programs (FDPs).



Dr. Qumar Abbas is an Deputy Librarian in Government Jawahar Lal Nehru Medical College, Aymer (Rajasthan). He has completed PhD, M.Phil and Master in Library and Information Science & MA (Geography) with addition of CPDL, RSCIT and Library Automation Courses from UGC, NISCAIR, and DELNET along with 21+ years experience in LIS. He is an active academic contributor to the field, having participated in 50 seminars, workshops, and conferences, and has presented or published 20 papers in various National and International Conferences and peer-reviewed Journals. He is also deeply involved in LIS education, sharing his expertise by teaching students of DLIS and BLIS while being associated with the LIS Departments of various universities. He is a dedicated leader in professional organizations, having served as an Organizing Secretary of many Conferences and Workshops. Currently, he holds key advisory roles as Senior Advisor of RTLA and Technical Adviser of ASLIP while also being the Incoming Open Council Member of ILA (2025-28). His extensive past service includes holding the posts of Council Member, Treasurer, Vice President, and President of RTLA, along with serving as Ex. Treasurer of FHSLA and Vice President of RMLA, contributions for which he has been a recipient of many State and National-level awards.



Dr. Surender Kumar is an Assistant Librarian at Sri Karan Narendra Agriculture University, Jobner-Jaipur (Rajasthan). He has completed B.L.I.Sc., M.L.I.Sc., and M.Phil. from Kurukshetra University, Kurukshetra and Ph.D. in library and information science from Vikram University, Ujjain. With over eight years of experience, he has served in reputed institutions, including Vikram University, Ujjain (Madhya Pradesh), Dr. B.R. Ambedkar University of Social Sciences, Mhow (Madhya Pradesh) and NBGSM College, Sohna. He has published and presented more than thirty research papers, with key interests in ICT applications, library management, and information retrieval systems.



Dr. Seema Saini is an accomplished Librarian at Sant Mohan Singh Khalsa Labana Girls College, Barara (Ambala), Haryana, where she has been serving since 2017. She holds B.L.I.Sc. (Gold Medalist) and M.L.I.Sc. Degrees from Kurukshetra University and earned her Ph.D. in Library and Information Science from Baba Mast Nath University, Rohtak. She has also qualified the UGC-JRF examination. Dr. Saini has published over twenty research papers in reputed national and international journals and has presented her work at several conferences. Her research interests include library automation, information retrieval, bibliometric studies, and the impact of digital environments on scholarly communication. She has actively participated in various workshops and training programmes focused on professional development and innovation in library services.



Miss Shetal Goswami is currently working as a School Librarian at G.S.S.S. Muhana, Sanganer, Jaipur. She is also Council Member of Rajasthan Technical Library Association. She has completed M.Com (EAFM), MLIS, NET Exam (LIS) thrice, and Raj SET Exam. She has participated more than 8 International and National conferences of LIS and presented 7 research paper in their Edited Book, Journals / Proceedings / Souvenir & Annuals. She has actively participated in 2 days workshops on ILMS & DAP. She has contributed as an editor in an edited book. In addition to teaching in both online and offline modes as a faculty member, reflecting professional competences and commitment to scholarly work.



BMS Publishing House

B-1214, Shri Rameshwar Bhawan, 2nd Floor,
Shastri Nagar, New Delhi-110052
(In Front Of Indian Post Office)

Ph: +91-7011047207, +91-9811087090, 011-20838505

Email: publishbms@gmail.com, printsbms@gmail.com

Website: www.bmsgroup.in



9 788199 207592