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Advances in Library Science & Information Management

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Dr. Abhijeet A. Babare
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PREFACE

The book *"Advances in Library Science and Information Management"* presents a comprehensive exploration of the rapidly transforming landscape of library and information services in the digital age. Libraries have evolved from being mere repositories of books and manuscripts to dynamic centers of information exchange, digital innovation, and lifelong learning. This volume aims to highlight the significant developments, emerging trends, and future challenges that shape modern library science and information management practices.

In the twenty-first century, the role of libraries extends far beyond the traditional boundaries of cataloguing and lending. The integration of information and communication technologies (ICT), digitization of resources, data analytics, artificial intelligence, and open-access initiatives has revolutionized how information is created, organized, and disseminated. This book delves into these evolving aspects, offering insights into digital libraries, knowledge management systems, metadata standards, information retrieval techniques, and the ethical dimensions of digital information.

Each chapter, authored by experts and practitioners in the field, contributes to a nuanced understanding of both theory and practice. The discussions encompass diverse domains, including user-centered library services, digital preservation, e-resources management, bibliometric analysis, and the role of information professionals in fostering information literacy. The book also emphasizes the growing importance of collaboration, networking, and policy frameworks in ensuring equitable access to information and sustainable library development.

This compilation is envisioned as a valuable resource for students, academicians, librarians, researchers, and information managers who seek to understand and adapt to the evolving paradigms of the information ecosystem. It is hoped that the perspectives shared herein will inspire innovative approaches, critical thinking, and practical applications in library and information management.

The editors express sincere gratitude to all contributors for their scholarly efforts and to the institutions that supported this initiative. Together, these contributions make this book a timely and meaningful addition to the ongoing discourse on the advancement of library and information science.

- Editors

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Advances in Library Science and Information Management
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RECENT TRENDS IN VIRTUAL LIBRARY PUBLICATIONS: A SCIENTOMETRIC STUDY

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Abstract:

The study seeks to illustrate the most current trends in virtual library research via the use of scientometrics. The study of scientific networks is important in many scientific domains. A social network with many nodes and connections serves as the foundation for scientific network research. Nodes include authors, publications, and journals, while linkages include citations, co citations, and co authorship. Data was collected from the web of Science database for the period from 1991 to till August 2025. The most relevant 761 documents were chosen from the collection, and selected documents were analyzed using Histcite and VOSviewer. The outcomes of this study will aid virtual library research by providing up-to-date and reliable research information.

Keywords: Virtual Library, Scientometrics, Vosviewer, Histcite

Introduction:

Scientometrics is the branch of science that studies the measurement and analysis of scientific literature. It applies quantitative methods to evaluate the growth, structure, productivity, and impact of research. A virtual library is a digital space that provides access to a wide range of information resources and services through the internet or a computer network, without requiring users to physically visit a traditional library building. According to Gapen (1993), A virtual library is the concept of remote access to the contents and services of libraries and other information resources, combining an on-demand information delivery system with the knowledge navigation and retrieval techniques of libraries.

Features of a Virtual Library

- ✓ Remote Access - Users can access resources from anywhere via the internet, without visiting the physical library.

- ✓ Digital Collections - Includes e-books, e-journals, databases, theses, reports, multimedia, and digitized documents.
- ✓ Availability -Resources and services are accessible at any time, unlike traditional libraries with fixed hours.
- ✓ Advanced Search & Retrieval - Online catalogs, search engines, and indexing tools make it easy to locate information quickly.
- ✓ Integration of Resources - Combines in-house digital content, subscription databases, open access resources, and even web-based materials.
- ✓ User-Centered Services - Personalized alerts, virtual reference services (chat/email), document delivery, citation support, and recommendation systems.
- ✓ Multimedia Support - Offers not just text, but also audio, video, images, and interactive learning content.
- ✓ Resource Sharing & Networking - Connects with other libraries and information networks, enabling interlibrary loans and collaborative access.
- ✓ Scalability & Flexibility - Can be expanded easily with new resources, databases, and technologies.
- ✓ Cost & Space Efficiency - Reduces the need for physical storage and multiple copies; more economical in the long run.

Objective of the Study

- ✓ To find out the annual productivity and author pattern of research articles on Virtual Library.
- ✓ To examine the types of documents and language of research articles on Virtual Library.
- ✓ To identify the top 10 Authors, keywords and countries contributing to research on Virtual Library.

Methodology:

The Scientometric approach is employed in this study of scholarly publications relating to "Virtual Library" as shown in Fig.1. The data's have retrieved from Web of Science database. Finalizing significant keywords is the first step in retrieving scientific publications related to a particular subject. The keyword virtual library was decided to use to retrieve precise and accurate documents. After the finalizing the domain-specific keyword. In the keyword field, the term virtual library was used, and the date range was limited from 1991 to till August 2025. After filtering the documents, a total of 761

documents were selected for scientometric analysis. The data was analysed using Vosviewer and Histcite, and the findings are expressed in tables, graphs, and network diagrams.

Web of Science Database

Search in : Web of Science Core Collection

Term of Search : (Topic : "Virtual Library*")

Searching Date : 22/9/2025

Web Link : https://www.webofscience.com/wos/woscc/summary/2bf69bc9-9b14-439c-b159-da7d73947db9-017bc5c8cb/times-cited-descending/1

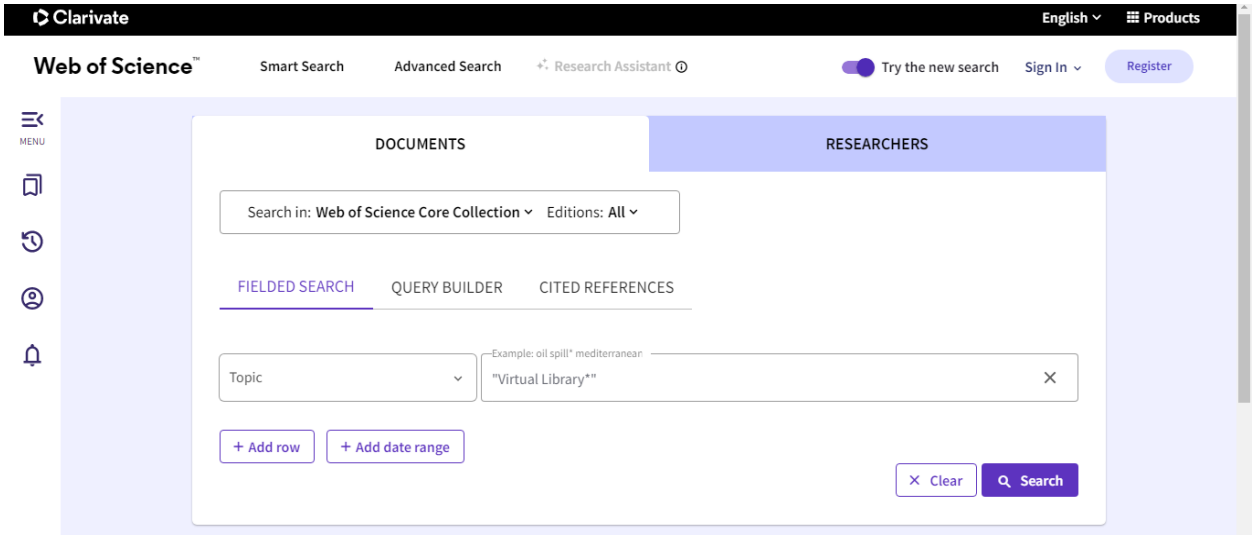

Figure 1: Document Collection Process

Results and Discussion:

Annual Productivity

Table 1 indicates the annual productivity of the virtual library. It is observed that the research output in the field of virtual library showing the ranges of growth year-wise. The total number of publications was 761. The highest number of publications in the year 2022 was 38, with a citation of 515. The year 1991 recorded the lowest number of publications, with just one article. The highest number of citations was in the year 2013. The study period of the publication seemed to rise gradually overall.

Document Types

Table 2 reveals the type of documents used for publication during the period 1991-August 2025.It could be seen that most of the publications were in articles with 613 (80.60%), followed by review articles 99 (13%), and the remaining meeting abstracts, editorial material, news items, letters, and notes shaving below three percent.

Table 1: Annual productivity

Year	Publication	Citation	Year	Publication	Citation	Year	Publication	Citation
1991	1	0	2003	22	929	2015	19	227
1992	2	20	2004	20	571	2016	23	555
1993	7	64	2005	20	531	2017	18	385
1994	16	12	2006	25	738	2018	18	284
1995	19	38	2007	25	715	2019	23	387
1996	17	71	2008	19	713	2020	30	715
1997	12	29	2009	21	469	2021	27	307
1998	24	1041	2010	28	573	2022	38	515
1999	20	252	2011	24	701	2023	30	314
2000	37	656	2012	23	522	2024	36	261
2001	17	814	2013	22	1455	Till August 2025	33	30
2002	23	772	2014	22	732			
	195	3769		271	8649		295	3980

Table 2: Document Types

Rank	Documents	Publication	Percent	Citation
1	Article	613	80.60	13074
2	Review	99	13	3255
3	Meeting Abstract	20	2.6	0
4	Editorial Material	19	2.5	60
5	News Item	7	0.9	1
6	Letter	2	0.3	0
7	Note	1	0.1	8
		761	100	16398

Languages

Table 3 reveals the different types of languages used for publication during the period 1991-August 2025.It could be seen that most of the publications were in the English language, with 696 (91.5%), with the remaining German, Spanish, Portuguese, French, Chinese, Japanese, Russian, and Slovak having below three percent.

Table 3: Languages

Rank	Language	Publication	Percent	Citation
1	English	696	91.5	16201
2	German	20	2.6	7
3	Spanish	20	2.6	65
4	Portuguese	17	2.2	119
5	French	4	0.7	0
6	Chinese	1	0.1	6
7	Japanese	1	0.1	0
8	Russian	1	0.1	0
9	Slovak	1	0.1	0
		761	100	16398

Author Pattern

Table 4 shows the authorship pattern of Virtual Library research articles published during the period studied, 1991 to August 2025. The total publication numbered 761

articles. The single author contributed the highest number of articles, 173, followed by two authors, 120 articles; three authors, 92 articles; four authors, 81 articles; five authors, 72 articles; six authors, 53 articles; seven authors, 40 articles; eight authors, 30 articles; nine authors, 27 articles; ten authors, 16 articles; and more than ten authors, 57 articles.

Table 4: Author Pattern

No. of Authors	Publication	%
Single	173	22.73
Double	120	15.76
Three	92	12.09
Four	81	10.64
Five	72	9.46
Six	53	6.96
Seven	40	5.26
Eight	30	3.94
Nine	27	3.55
Ten	16	2.12
More than Ten	57	7.49
	761	100

Authors

Table 5: Authors

Rank	Authors	Documents	Citations
1	Balasubramanian, V.	249	9674
2	Govindarajan, Marimuthu	207	6629
3	Jayabharathi, Jayaraman	148	1908
4	Sundaraganesan, N.	125	4750
5	Jayabharathi, J.	117	1518
6	Thanikachalam, Venugopal	116	1499
7	Swaminathan, M.	105	5167
8	Rajasimman, M.	87	1642
9	Balasubramanian, T.	86	1902
10	Sivakumar, G.	84	1180

The top 10 authors are listed in table 5, which shows the distribution of authors' collaborative papers in virtual library research, and the highest number of publications is made by Balasubramanian, V., with 249 articles, followed by Govindarajan, Marimuthu, with 207 records in second place; Jayabharathi, Jayaraman, had the third position with 148 records; Sundaraganesan, N., had the fourth position with 125 records; and Jayabharathi, J., had the fifth position with 117 records.

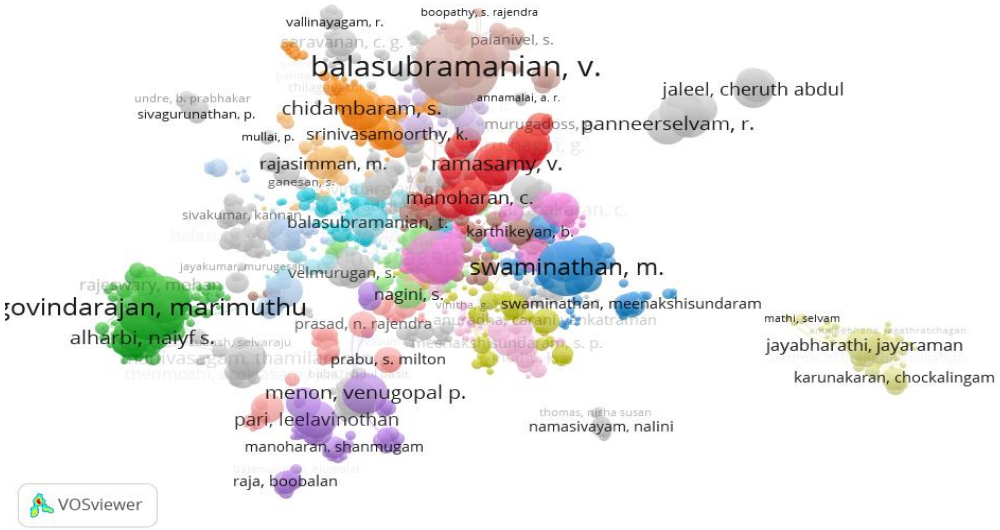

Figure 2: Visualization map on citation with authors

Keywords

The top 10 keywords are listed in table 6.

Table 6: Keywords

Rank	Keywords	Occurrences	Avg. citations
1	Antioxidants	221	45.3167
2	Lipid Peroxidation	189	40.8889
3	Oxidative Stress	163	36.9018
4	Antioxidant	150	32.24
5	Apoptosis	137	33.7226
6	Antibacterial Activity	132	35.3485
7	Photocatalysis	115	40.0696
8	Microstructure	113	22.6018
9	Xrd	109	34.2844
10	Dft	105	20.1524

It shows the occurrences in virtual library research, and the highest number of keyword occurrences is made by "Antioxidants," with 221 articles, followed by "Lipid Per

oxidation," with 189 records in second place; "Oxidative Stress" had the third position with 163 records; "Antioxidant" had the fourth position with 150 records; and "Apoptosis" had the fifth position with 137 records.

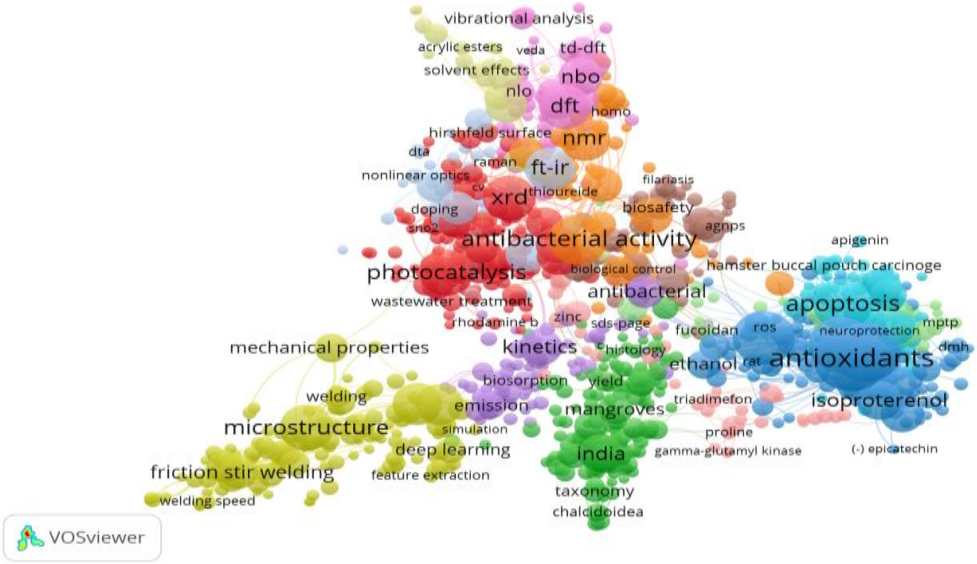

Figure 3: Visualization map on occurrence with keywords

Countries

The top 10 countries are listed in table 7, which shows the distribution of India's international collaborative papers in virtual library research. The highest number of publications is made by India, with 7424 articles, followed by Saudi Arabia with 356 records in second place. The USA had the third position with 223 records, Italy had the fourth position with 216 records, and South Korea had the fifth position with 202 records.

Table 7: Countries

Rank	Countries	Documents	Citations
1	India	7424	171112
2	Saudi Arabia	356	6161
3	USA	223	6296
4	Italy	216	5767
5	South Korea	202	4425
6	Peoples R China	148	4664
7	Malaysia	137	3352
8	Oman	108	3151
9	Japan	62	3288
10	Ethiopia	59	845

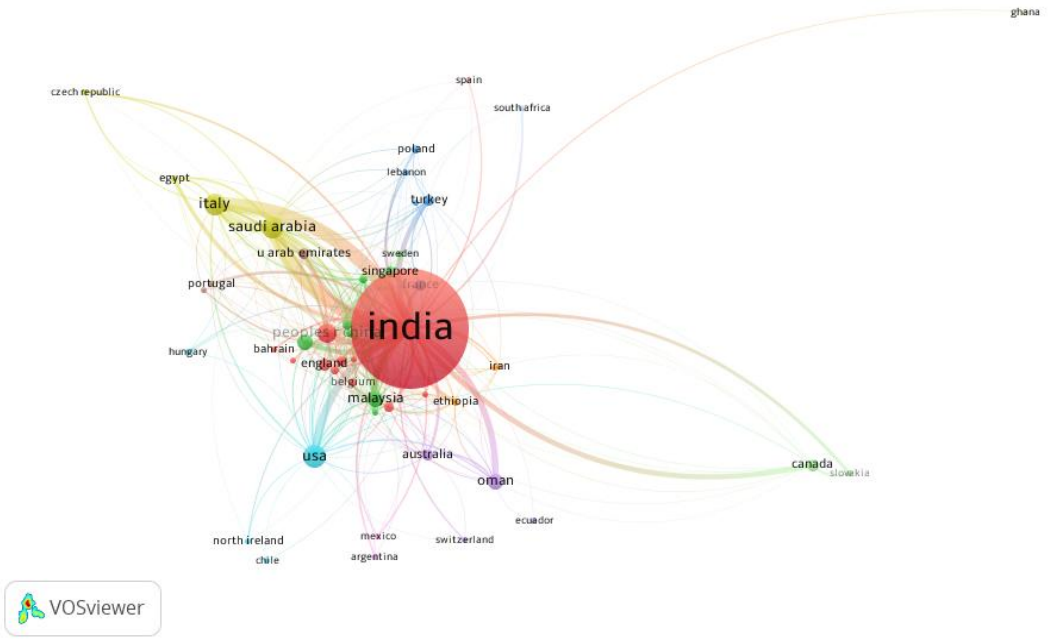

Figure 4: Visualization map on citation with countries

Conclusion:

The scientometric analysis of recent trends in virtual library publications reveals that research in this field has been steadily growing, reflecting the increasing importance of digital and remote access to information in academic and professional contexts. The study highlights that most contributions come from leading countries and institutions, with collaborative research networks playing a central role in shaping the discourse. Core themes identified include digital resource management, user behavior, information retrieval, e-learning integration, and the impact of emerging technologies such as cloud computing and artificial intelligence. The citation patterns and keyword co-occurrence suggest that while fundamental concepts of virtual libraries remain central, there is a clear shift towards innovative applications and user-centric services. Despite challenges such as digital divide, copyright issues, and infrastructure limitations, the trend indicates a strong and sustained research interest. Future research should emphasize inclusivity, interoperability, and sustainable models to ensure global access to knowledge.

References:

1. Rajeswari, S., & Praveena, K. (2019). Digital literacy research output in J-Gate: A bibliometric study. *Journal of Advances in Library and Information Science, 8*(4), 163–167. http://jalis.in/pdf/8-4/Praveena.pdf

2. Veerakumar, R., Rajeswari, S., & Praveena, K. (2021). Mapping of artificial intelligence research output: A scientometric study. *Library Philosophy and Practice (e-journal),* 4925. https://digitalcommons.unl.edu/libphilprac/4925
3. Baskaran, D., Rajeswari, S., & Byun, H.-S. (2025). Discovering global research trends and scientific progress in biofiltration of air: A scientometric analysis and outlook. *Journal of Hazardous Materials Advances, 18,* 100653. https://doi.org/10.1016/j.hazadv.2025.100653
4. Baskaran, D., Rajeswari, S., Saravanan, P., & Byun, H.-S. (2024). Trends of chemical engineering applications in the last three decades: A scientometric and retrospective review. *Korean Journal of Chemical Engineering, 41*(8), 2203–2225. [https://doi.org/10.1007/s11814-024-XXXX-X] *(Add DOI if available)*
5. Amanullah, A., & Rajeswari, S. (2022). A scientometric analysis of scientific communications on "Gastritis." *International Journal of Early Childhood Special Education, 14*(5), 4887–4896. https://doi.org/10.9756/INTJECSE/V14I5.592
6. Amanullah, A., & Rajeswari, S. (2022). Open access literature on gastritis from G20 countries: A scientometric study. *Specialusis Ugdymas, 1*(43), 8075–8088. http://sumc.lt/index.php/se/article/view/1181
7. Amanullah, A., & Rajeswari, S. (2022). Open access scholarly literature on gastritis (2002–2021) in Web of Science: A scientometric analysis. *International Journal of Economic Perspectives, 16,* 76–89. https://ijeponline.org/index.php/journal/article/view/293
8. Amanullah, A., & Rajeswari, S. (2021). Scientometric analysis of global publication output on "Ladakh" in Web of Science (1989–2018). *Library Philosophy and Practice (e-journal),* 5532. https://digitalcommons.unl.edu/libphilprac/5532

CLOUD COMPUTING APPLICATIONS IN LIBRARIES

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Abstract:

Cloud computing has become a revolutionary force in contemporary library management and services. By utilizing cloud-based technologies, libraries can improve resource sharing, enhance data storage and access, and lower operational expenses. Solutions like cloud-hosted integrated library systems (ILS), digital archives, and collaborative tools enable libraries to provide more effective and user-centric services. Additionally, cloud computing facilitates scalability, real-time updates, and remote access to information resources, addressing the changing requirements of users in academic, public, and special libraries. This paper examines the primary applications, advantages, and challenges associated with the adoption of cloud computing in library settings.

Keywords: Information Technology, Cloud Computing, Library Services, Library and Information Centers.

Introduction:

Recent advancements in technology have significantly transformed various sectors, including library and information science. The influence of information technology has had a positive impact on libraries and the services they offer to their users. In recent years, cloud computing technology has rapidly expanded within these fields, demonstrating a strong growth trajectory. By utilizing the internet along with centralized remote services, this technology manages data and applications to deliver services effectively. Cloud computing enables consumers and businesses to use applications without needing installation and allows them to access their files from any internet-connected device. This technology enhances computational efficiency by centralizing storage, memory, processing, and bandwidth. This groundbreaking technology is a product of ongoing progress in data management systems. Nearly everyone who regularly uses the internet engages in cloud computing, whether they are utilizing Google Gmail, organizing images on Flickr, or conducting searches online with Bing.

What is Cloud Computing:

In the expression 'cloud computing,' the term 'cloud' symbolizes the Internet. By utilizing cloud computing, individuals can access data and files they have uploaded, or software applications they require for personal or work purposes, at any time and from any device through the Internet. Nowadays, the term 'cloud computing' is increasingly prevalent in the business world. Professionals need to comprehend its significance.

According to Wikipedia, cloud computing involves delivering computing services rather than offering them as products, where shared resources, software, and information are made available to computers and other devices as a utility (similar to the electricity grid) over a network, typically the Internet.

History of Cloud Computing:

The origins of cloud computing trace back to the 1950s when organizations first utilized large mainframe computers. These machines were costly and required substantial infrastructure, allowing multiple users to access them concurrently through basic terminals in a practice known as time-sharing. This foundational idea of shared computing paved the way for cloud computing. In the 1970s and 1980s, the development of virtualization technology enabled a single physical computer to operate several virtual machines. This advancement significantly enhanced the efficiency of computing resources and established the groundwork for the adaptable infrastructure that cloud computing depends on today.

The 1990s witnessed the advent of the Internet and a transition towards distributed computing. During this period, companies began to provide Application Service Providers (ASPs), which delivered software applications over the internet. However, these initial models lacked the scalability and flexibility characteristic of current cloud services. The genuine rise of cloud computing began in the early 2000s, marked by Amazon's launch of Amazon Web Services (AWS) in 2002, followed by the introduction of Elastic Compute Cloud (EC2) in 2006, which enabled users to rent virtual computers as needed. This represented a pivotal shift, as it introduced the notion of computing being offered as a utility. Soon after, Google and Microsoft launched their respective platforms, Google App Engine and Microsoft Azure, further establishing cloud computing as a commercial service.
Throughout the 2010s, cloud computing saw rapid development. Organizations began to shift substantial portions of their infrastructure to the cloud, driven by advantages such as cost reductions, scalability, and agility. The emergence of hybrid and multi-cloud strategies

provided organizations with enhanced control and flexibility over their IT environments. Technologies such as containers, microservices, and orchestration tools like Kubernetes facilitated the creation of cloud-native applications. Furthermore, cloud services have become the backbone for new technologies such as artificial intelligence, machine learning, and the Internet of Things (IoT). As we move into the 2020s and beyond, cloud computing continues to advance, with a growing focus on serverless architectures, edge computing, automation, and sustainability. Today, cloud computing is a vital component of the digital landscape, supporting everything from small applications to large-scale enterprise systems.

Advantages of Cloud Computing in Library Services:

1. **Service-oriented architectures:** the cloud provides access to resources, software, networks, and applications via the web, originating from remotely located data centers that are managed.
2. **Pay-per-use model:** it operates on demand. We can request the service for a specific duration, such as a few days or weeks.
3. **Cost-effective:** resources, services, software, and more are shared among a group of institutions, reducing costs for each institution. Compared to traditional computing, cloud computing costs are often lower.
4. **Portability:** since the service is web-based, it can be accessed through a browser from anywhere in the world.
5. **Eco-friendly:** due to the pay-per-use model, electricity consumption is minimized, thus supporting green computing initiatives.
6. **Adjustable storage:** In traditional systems, if server capacity is insufficient, it requires replacement with a new server. In cloud computing, storage capacity can be modified according to the needs of the institution, as the service provider manages the storage.
7. **Flexible and Innovative:** new technologies are made available as they emerge from the service provider, and the servers used are generally more adaptable than those in traditional computing.
8. **Cloud OPAC:** Most institutions worldwide host their catalogs online. These catalogs are stored on their local servers but are accessible via the cloud, providing greater benefits to users looking for available materials.

9. When data is transferred to the cloud, it becomes cloud-based, allowing sharing among users. This eliminates the need for local server storage, installation, maintenance, and backups, enabling librarians to focus on innovative services.

Limitations of Cloud Computing in Library Services:

1. Every technology has its own set of limitations. Below are some constraints associated with cloud computing. Transitioning to a reliable cloud computing service can prove to be a challenging endeavor.
2. **Security:** The library manages a vast amount of information, and to implement cloud computing, data must be transferred to the cloud server. Therefore, it is essential to establish a strict service level agreement before proceeding with the move.
3. **Reliability:** Concerns about reliability loom large in cloud computing. Once companies commit to cloud computing, they hope that the service providers uphold their service agreements. If not, it could lead to issues.
4. Data backup and concerns regarding intellectual property rights are additional challenges that need to be addressed in advance.

Examples of Cloud Libraries:

- OCLC
- Library of Congress
- Exlibris
- Polaris
- Scribd
- Discovery Service
- Google Scholar
- World cat
- Encore

Application of Cloud Technologies in Libraries:

1. Libraries can host their website with the help of cloud technologies. The District of Columbia Public Library is using Amazon's EC2 (Elastic Computing Cloud) service to host their website, and it provides rapid scalability and redundancy.
2. Libraries can build a digital library, content management systems, an institutional repository, an Inter Library Loan (ILL) system, and an Integrated Library System

(ILS) from a locally-managed to a vendor-hosted environment, of their own, with the help of cloud technology.

3. Libraries can provide services to the user. It collects responses in web forms, Google Calendar for instruction and meeting rooms, and Google Analytics to collect statistics about their website, catalogue, and blogs.
4. Cloud technology can be applied for backing up media collections and storing and accessing bibliographic data. Libraries can also store and maintain much of the same data hundreds and thousands of times.
5. Libraries can build their PC systems on the cloud with this technology, so that users can incorporate the system more simply. When the library systems are deployed as open cloud solutions, then the library community itself can step up to create extensions to their core services and, more importantly, share them throughout the community using cloud computing.
6. **OCLC's Webscale:** OCLC is ideally using cloud computing for libraries and has set an example for others. For years, OCLC has been operating as a cloud computing vendor, providing cataloguing tools over the internet and enabling member institutions to access its centralized data store. OCLC has implemented the plan for library management systems, specifically WorldShare Management Services (WMS). This service offers solutions for various areas, including acquisitions, analytics, resource sharing, cataloguing, and license management components. It offers the entire library collection management in a cloud-based application. The primary purpose of webscale is to enable libraries to share their resources, data, and innovations easily. To serve these purposes, it has certain features that work together to provide its users with better library services. In other words, this will generate cost benefits for libraries and efficiencies that are not possible when using disparate, specialised systems. The service promises to include privacy, security, scalability and technical support.
7. **Ex-Libris Cloud:** Ex-Libris is a leading library software vendor from the USA. It provides cloud-based solutions to automate library operations. It developed most products for locally implemented solutions and later adapted them to a hosted environment. Its website claims that over 5300 in more than 80 countries are deploying Ex-Libris solutions for automation of their library resources. It enables libraries to enhance their efficiency, reduce operational costs, and increase their

value by launching new services. It has changed the way traditional library resources are managed through its library-based system, Alma. Besides ensuring considerable savings in total cost, the implementation of software and the use of a centralized cloud service enable libraries to easily influence the collaborative efforts of the library community, providing effective services for their users. To provide worldwide cloud-based services, it has opened data centres at various locations. The company promises to adhere to data security, updates, and standards in implementing cloud services to safeguard the interests of customers.

8. **Duraspace's DuraCloud:** Duraspace provides open source repository solutions by undertaking turnkey projects for organisations and libraries to enable them to share scholarly literature using DSpace and Fedora Commons. It is exceptionally devoted to improving and sustaining Fedora and DSpace. These open-source repository solutions are very famous for IR solutions. Its new service, DuraCloud, provides digital preservation support services in the cloud, which are cost-effective and simple for libraries. DuraCloud helps libraries move content to the cloud and store it with different service providers to eliminate the risk of data loss. The cloud solutions offered include online backup, preservation and archives, media access, online sharing, and a cloud broker.
9. **OSS Labs:** OSS Labs from India is using Amazon's elastic cloud computing platform owing to the various capabilities of Amazon, such as high durability of data, ISO standards-based strong information security and flexibility. It is expected that the OSS labs will be able to provide robust open-based solutions to demanding customers. OSS Labs offers hosting and maintenance services for Koha ILS and DSpace IR. OSS Labs uses Amazon's cloud services. Library operations have become very cost-effective, and the library staff need not worry about the maintenance of software, etc.

Conclusion:

Cloud computing offers significant advantages for libraries by streamlining operations, enhancing accessibility, and enabling cost-effective resource management. Its applications range from cloud-based catalogue systems to digital archives and remote access platforms supporting modern library functions and user expectations. While challenges such as data security and internet dependency remain, the benefits of scalability, collaboration, and efficiency make cloud computing a valuable tool for the

future of library services. Embracing this technology allows libraries to stay relevant and responsive in an increasingly digital world.

References:

1. Abidi, F., Abidi, H. J., & Armani, S. (2012). Cloud libraries: A novel application of cloud computing. In *International Conference on Education and e-Learning Innovations* (pp. 1-4). IEEE.
2. Azam, M. G. (2019). Application of cloud computing in library management: innovation, opportunities and challenges. *RESEARCH REVIEW International Journal of Multidisciplinary*, *4*(1), 51-58.
3. Dutt, M. (2015). Cloud computing and its application in libraries. *International Journal of Librarianship and Administration*, *6*(1), 19-31.
4. Islam, M. N., Islam, M. S., Anwar, A., & Alam, M. K. (2023). Cloud computing applications in library services of Bangladesh: a study on librarians' perceptions. *Information Discovery and Delivery*, *51*(1), 88-104.
5. Kaushik, A., & Kumar, A. (2013). Application of cloud computing in libraries. *International journal of information dissemination and technology*, *3*(4), 270-273.
6. Kumar, P. (2015). Cloud computing in libraries: An overview. Research Review International Journal of Multidisciplinary, 3(10), 1070-1072.
7. Kumar, R. (2017). Applications of cloud computing in academic libraries. *Library waves*, *3*(1), 80-85.
8. Mavodza, J. (2013). The impact of cloud computing on the future of academic library practices and services. *New Library World*, *114*(3-4), 132-141.
9. Yuvaraj, M. (2013). Cloud Computing Applications in Indian Central University libraries: A study of librarians use. *Library Philosophy and Practice (e-journal)*, *992*.

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DIGITAL TRANSFORMATION IN LIBRARY AND INFORMATION SCIENCE: TRENDS AND FUTURE DIRECTIONS

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Abstract:

Over the past two decades, the disciplines of Library Science and Information Management have undergone substantial transformation driven by digital technologies, user expectations, and evolving roles of libraries in society. This paper surveys the key recent advances in library and information science (LIS) and information management, focusing on the following thematic areas: (1) intelligent systems and AI/ML in libraries, (2) metadata, interoperability, and linked data, (3) user engagement, personalized services, and open science, (4) new models of library management and governance, (5) skills, competencies, and professional development, and (6) challenges and future directions. Drawing on recent literature, this article argues that the future of libraries lies in hybrid, adaptive, and user-centric ecosystems.

Keywords: Library Science, Information Management, AI, Metadata, Open Science, Library Governance, LIS Competencies

Introduction:

Libraries and library/information professionals have long served as custodians of knowledge, gatekeepers of organization, and facilitators of access. But the acceleration of digital content, proliferation of research outputs, and rising expectations of users in the "information age" have compelled deep changes. It is observed; libraries are "transforming and extending" their services through collaboration with IT and computing fields. The discipline of LIS itself is evolving—for example, in shifting research topics and methods. Due to development of Information Technology in Library and Information science various new advance technique is being used in libraries.

This article reviews and synthesizes recent advances in library science and information management. Its contribution is not empirical data collection but conceptual and synthetic: highlighting transformative trends, framing them in relation to challenges, and pointing toward future research areas.

1. Intelligent Systems, AI, and Machine Learning in Libraries

One of the most visible areas of advancement is the adoption of artificial intelligence (AI), machine learning (ML), and related intelligent systems in libraries and information management.

1.1 Applications and Scope

Das & Islam (2021) conducted a systematic review on AI/ML in libraries and found that much of the work remains theoretical or pilot in nature, with relatively few large-scale deployed systems. Typical use cases include:

- **Automated cataloging and metadata extraction**: using natural language processing (NLP) and entity recognition to assist or replace manual metadata entry.
- **Recommendation systems**: for suggesting resources (books, articles) tailored to user profiles and behavior.
- **Chatbots and conversational agents**: to respond to user queries, guide navigation, and support information literacy.
- **Predictive analytics for collection development, usage forecasting, demand modeling**.
- **AI-driven metadata modeling**: Bagchi (2024) proposes a generative AI–LLM (large language model) collaboration approach to build "disentangled" metadata models that can adapt across heterogeneous library environments. Huang & Liao (2020) provide a broad review of AI in library services, noting both potentials and challenges such as algorithmic bias, privacy, and technological complexity.

1.2 AI and Ranganathan's Laws

A recent conceptual piece reinterprets S. R. Ranganathan's five laws of library science (e.g., "books are for use," "save the time of the reader") through the lens of AI: proposing how AI can enhance resource access, personalization, and system optimization, while still aligning with LIS philosophical foundations.

1.3 Challenges and Gaps

- **Bias and fairness**: AI systems trained on existing datasets may perpetuate biases or exclude underrepresented groups if not carefully designed.
- **Data quality and provenance**: reliable training data, metadata consistency, and provenance are critical.
- **Interoperability & scalability**: integrating AI modules into existing library management systems (LMS) or digital platforms is nontrivial.

- **Skills gap**: librarians may lack deep technical knowledge of AI/ML.
- **Sustainability, cost, and ethical governance**: resource constraints and ethical considerations (privacy, transparency) are often under-addressed.
- Despite these challenges, the trend is clear: libraries are gradually embracing AI/ML as a component, though rarely the entirety, of their service architecture.

2. Metadata, Interoperability, and Linked/Connected Data

Effective information management hinges on metadata, data models, and systems interoperability. Advances in these areas shape the efficacy of digital collections, discovery, and cross-institutional integration.

2.1 Linked Data and Semantic Web

Linked Data, RDF (Resource Description Framework), ontologies, and semantic web approaches have matured in library settings. Libraries increasingly publish bibliographic and authority data as linked open data, enabling cross-dataset linking, semantic enrichment, and external reuse.

2.2 Generative Metadata Modelling

As noted earlier, Bagchi (2024) suggests an ontology-driven, multi-level metadata modeling approach leveraging generative AI and LLMs to decompose and recompose models for differing institutional contexts.

2.3 Multilingual and Crosswalk Metadata Harmonization

In global and multilingual contexts, harmonizing metadata across languages and cataloguing traditions is a challenge. It is examining multilingual metadata harmonization efforts in large multinational library systems.

2.4 Interoperability, APIs, and Web Services

Modern library systems increasingly adopt open APIs, microservices, and modular architectures to expose catalogue, holdings, usage, and analytics data. This enables external services (e.g., discovery layers, recommender systems) to integrate smoothly. The shift also reflects in library management model research: Hussain *et al.* (2024) published in Emerald journal and review library management models and emphasize modular, flexible, scalable design as a direction.

2.5 Data Curation, Preservation, and Continuum Models

For long-term access and reliability, models of recordkeeping and archival continuity matter. The records continuum model—originating in archival science—offers a conceptual lens to view records and metadata as a continuum rather than discrete

stages. Libraries and digital repositories can benefit from integrating continuum thinking with metadata strategies

3. User Engagement, Personalization, and Open Science

The user is central to library relevance. Advances in information management increasingly aim to understand, engage, and empower users.

3.1 Creative Strategies for Engagement

It includes a variety of creative, tech-infused strategies to empower library users: interactive platforms, gamification, participatory design, user co-creation, and socially embedded services.

3.2 Personalization and Recommendation Services

As libraries adopt recommender systems, personalized search, user profiling, and usage analytics, the tension is between convenience and privacy. Effective personalization requires ethical safeguards plus transparency to maintain trust.

3.3 Open Science, Open Access, and Institutional Repositories

Academic libraries are increasingly key actors in facilitating open science: managing institutional repositories, curating open access outputs, enabling data management plans (DMPs), and supporting open peer review. Liu *et al.* (2023) analyse in journal of ScienceDirect how academic libraries engage in open science and find that libraries act as brokers, infrastructure providers, and advocates.

3.4 Information Literacy and Digital Literacy

Emerging literacies—such as data literacy, computational literacy, AI literacy—are becoming part of the library's educational mission. Libraries are embedding instruction on critical use of AI tools, responsible data use, and digital ethics.

3.5 Equity, Inclusion, and Social Justice

LIS scholarship increasingly foregrounds marginalized populations, digital divides, and inclusive services. There are lot of research on the information-seeking behaviour of marginalized groups, advocating inclusive library services. Another issue regarding libraries' role in social justice and bridging digital divides. It should be considered and emphasis to provide better library services to the digital divide community. The challenge for libraries is to ensure that advanced services (AI, personalization, digital platforms) do not exclude or disadvantage underrepresented users.

4. Library Management, Governance, and Organizational Models

Advances in management theory and institutional governance are reshaping how libraries operate.

4.1 Flexible and Hybrid Management Models

Traditional hierarchical models are giving way to flexible, networked, team-based, and hybrid structures. Libraries are integrating cross-functional teams, project management frameworks, and agile practices. It is need of hour to emphasize the need for adaptable, modular library management models (LMMs).

4.2 Metrics, Analytics, and Evidence-Based Decision Making

Advanced analytics (e.g., usage statistics, altimetric, big data) allows libraries to make data-driven decisions regarding collections, service redesign, space planning, and staffing. These analytics may be integrated with AI for predictive forecasting.

4.3 Networked Collaborations and Consortia

Libraries are increasingly part of national/international consortia, sharing collections, catalogues, licensing, and infrastructures. Collaborative models reduce redundancy, share costs, enable unified discovery, and tap into economies of scale.

4.4 Risk, Ethics, and Governance in Tech Deployments

As libraries adopt more technology (AI, cloud, vendor systems), governance mechanisms (policies, oversight, auditing, user consent, ethical review) must evolve. Risk management (data breaches, algorithmic errors) becomes essential.

4.5 Sustainability and Resource Models

Financial sustainability is a perennial challenge. Libraries are exploring new funding models (institutional support, grants, cost-sharing), partnerships with private and public sectors, and demonstrating value to stakeholders.

5. Skills, Competencies, and Professional Development

As libraries evolve technologically and conceptually, professional roles and skills must evolve too.

5.1 Evolving Competency Frameworks

Library professionals increasingly require hybrid competencies: domain knowledge (metadata, information science), technical skills (coding, APIs, AI/ML basics), data analytics, user experience (UX) design, digital pedagogy, project management, and ethical literacy.

Study of knowledge management skills among Indian library professionals and find gaps in data literacy and digital skills. Many factors are responsible for it. To overcome this problem facilitates and fund should be made available to the libraries and library professionals.

5.2 Curriculum Reform and LIS Education

To keep pace, LIS educational programs are revising curricula frequently to incorporate AI, data science, computational methods, digital scholarship, and innovation.

5.3 Continuous Learning, Micro credentials, and Lifelong Learning

Given the rapid pace of change, librarians must continuously upskill via workshops, MOOCs, micro credentials, hackathons, peer learning, and self-study. Professional associations, consortia, and libraries themselves often offer such programs.

5.4 Role Transition: From Librarian to Information Architect, Data Curator, Digital Scholarship Specialist

Traditional titles are giving way to hybrid ones. Many library professionals now act as data curators, digital scholars, community engagement specialists, knowledge managers, or AI/metadata strategists

6. Challenges, Risks, and Future Directions

While the advances are promising, the path ahead is strewn with challenges. This section outlines key risks and possible research directions.

6.1 Digital Inequities and Exclusion

Advanced library systems may inadvertently exclude communities lacking high digital literacy, access to devices, or stable internet. The digital divide remains a central challenge. Libraries must design multi-modal services (physical + digital) and inclusive user interfaces.

6.2 Ethical AI, Privacy, and Trust

With increasing reliance on AI and user data, libraries must navigate issues of privacy, informed consent, transparency, bias mitigation, algorithmic accountability, and explain ability. Ethical review boards and stakeholder sensitivity must be embedded.

6.3 Legacy Systems and Technical Debt

Many libraries still run legacy ILS or LMS systems that resist integration, upgrading, or modular reconfiguration. Dealing with technical debt, migration challenges, and interoperability with new modules is hard.

6.4 Scalability, Maintenance, and Sustainability

Pilot AI or metadata systems may be viable in small settings, but scaling them (infrastructure, cost, staffing) is nontrivial. Long-term maintenance, versioning, and system evolution must be planned.

6.5 Research Gaps and Methods

As the LIS field evolves, new research agendas include:

- Empirical evaluation of AI systems deployed in real library environments (beyond small pilots)
- Cross-institutional comparative studies
- User studies on AI-supported services (acceptance, trust, behaviour)
- Hybrid qualitative + computational methods (e.g., mixed methods, bibliometric analyses)
- Ethical case studies and governance models
- Sustainable business models, cost-benefit analyses, ROI of tech investments

The evolution of LIS research topics and methodologies has been documented: the field is shifting toward tech-intensive, interdisciplinary, data-driven, and socially engaged research.

Conclusion:

Library science and information management are at a transformative moment. The confluence of AI, metadata innovation, user-centric design, management rethinking, and evolving competencies is reshaping libraries from static repositories to dynamic, adaptive information ecosystems.

To succeed, libraries must act as hybrid organizations: leveraging advanced technologies while preserving core values of equity, open access, intellectual freedom, and community service. Institutional governance, ethical frameworks, sustainable funding, and professional resilience will be crucial.

From a research perspective, the field is ripe for empirical studies, longitudinal evaluations, user-cantered experiments, and cross-disciplinary collaborations. The future library is not merely digital — it is intelligent, inclusive, data-aware, and socially embedded.

References:

1. Das, R. K., & Islam, M. S. U. (2021). *Application of artificial intelligence and machine learning in libraries: A systematic review. arXiv.* https://arxiv.org

2. Hussain, A., *et al.* (2024). *Library management models: A review and direction for future. Global Knowledge, Memory and Communication (GKMC).* Emerald Publishing. https://www.emerald.com
3. Liu, L., *et al.* (2023). *The engagement of academic libraries in open science: Systematic review and meta-synthesis. ScienceDirect.* https://www.sciencedirect.com
4. Paul, S., Chauhan, S., & Pal, A. K. (2024). *Empowering library users: Creative strategies for engagement and innovation. arXiv.* https://arxiv.org
5. Bagchi, M. (2024). *A generative AI-driven metadata modelling approach. arXiv.* https://arxiv.org
6. Wheeler, T. R., *et al.* (2022). *Transforming and extending library services by embracing new technologies.*
7. Kassim, M. (2024). *Research trends in library and information science: Tanzania 1990–2023. SAGE Journals.* https://journals.sagepub.com
8. *Research trends in library and information science.* (2021). *ASIS&T Journal. Wiley Online Library.* https://onlinelibrary.wiley.com
9. Ibekwe-SanJuan, F., & Dousa, T. M. (2014). *Multilingual metadata harmonization in a global context. Knowledge Organization.* https://www.researchgate.net
10. Huang, Y., & Liao, H. (2020). *Artificial intelligence applications in library services: A comprehensive review. International Journal of Library and Information Science.* https://www.researchgate.net
11. Higgins, S., & Johansen, T. (2019). *Understanding marginalized populations' information-seeking behaviours: Towards inclusive library services. Library Trends.* https://www.researchgate.net
12. Jaeger, P. T., Gorham, U., Bertot, J. C., & Sarin, L. C. (2015). *Libraries, social justice, and the digital divide. Public Library Quarterly.* https://www.researchgate.net
13. Subaveerapandiyan, A., & Sindhu, D. (2022). *Knowledge management skills for 21st-century library professionals in India. arXiv.* https://arxiv.org
14. *Records continuum model.* (n.d.). *Wikipedia.* https://en.wikipedia.org/wiki/Records_continuum_model

INFORMATION ANXIETY AND COGNITIVE OVERLOAD: A PSYCHOLOGICAL VIEW OF DIGITAL RESEARCH

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1. Introduction:

The digital revolution has transformed how we access, process, and store information. From online databases and open-access journals to AI-driven research tools, the availability of knowledge has never been greater. Yet, amidst this abundance, a silent crisis has emerged—information anxiety. It is the uneasy feeling people experience when confronted with too much information and too little clarity. For researchers, students, and educators, this phenomenon is coupled with cognitive overload, where the brain's capacity to process data is overwhelmed. Together, these psychological effects impact concentration, productivity, and overall well-being in academic and digital research environments.

This chapter explores the psychological dimensions of information anxiety and cognitive overload, examining their causes, impacts, and strategies for management. It bridges insights from psychology, cognitive science, and information management to offer a holistic understanding of the human side of digital research.

2. Evolution of Information in the Digital Age

Before the digital era, libraries served as gatekeepers of knowledge—organized, curated, and finite. With digitization, the walls of the library expanded infinitely into the virtual world. Search engines and online repositories now give instant access to millions of documents, but without the human curation that physical libraries once provided.

This explosion of content has altered not just how information is accessed, but also how it is experienced. According to Clay Shirky's concept of "filter failure," the problem is not information overload itself, but our inability to filter and prioritize. In academic contexts, this translates to scholars drowning in sources, reading abstracts instead of full papers, and struggling to discern credible research from noise.

3. Understanding Information Anxiety

The term *information anxiety* was first introduced by Richard Saul Wurman (1989), describing "the black hole between data and knowledge." It arises when individuals cannot effectively transform raw information into meaningful understanding. Psychologically, it manifests as stress, confusion, decision paralysis, and self-doubt.

3.1 Characteristics of Information Anxiety

- **Overchoice:** Too many available options make decision-making difficult.
- **Uncertainty:** Difficulty evaluating accuracy and relevance.
- **Fear of Missing Out (FOMO):** Anxiety over ignoring potentially useful data.
- **Decision Fatigue:** Exhaustion from constant information-based decisions.

In digital research, these elements compound, creating a persistent background stress that hinders learning and critical thinking.

4. Cognitive Overload: The Mental Cost of Data

Cognitive overload occurs when the volume or complexity of information exceeds our working memory capacity. According to cognitive load theory (Sweller, 1988), human cognition has limited resources for processing new data. When these limits are exceeded, comprehension and retention drop sharply.

4.1 Types of Cognitive Load

- **Intrinsic Load:** The inherent complexity of the content.
- **Extraneous Load:** The way information is presented (e.g., cluttered interfaces).
- **Germane Load:** The effort devoted to creating meaningful understanding.

In digital research, poor interface design, pop-up distractions, and information fragmentation increase extraneous load, leaving little mental energy for actual comprehension.

5. Causes in Digital Research Environments

5.1 Information Overabundance

Scholars now face an overwhelming volume of papers and data sources. The "publish or perish" culture fuels this overproduction, making it hard to distinguish significant findings.

5.2 Multitasking and Digital Switching

Constant switching between tabs, databases, and communication apps disrupts sustained attention, leading to fragmented cognition.

5.3 Lack of Information Literacy

Without proper training in evaluating and synthesizing online data, users rely on surface-level cues like popularity or accessibility, not credibility.

5.4 Algorithmic Bias

Recommendation systems create echo chambers, presenting similar types of content repeatedly. This narrows exposure and distorts understanding.

6. Psychological Theories Behind Overload

Several psychological principles explain why humans struggle with excess information:

6.1 Miller's Law (1956)

Humans can hold roughly seven (plus or minus two) pieces of information in working memory. Exceeding this range leads to confusion and reduced accuracy.

6.2 Selective Attention Theory

Our brains filter stimuli based on relevance. When multiple sources compete for attention, mental fatigue occurs.

6.3 Decision Theory

Too many options can lead to "choice paralysis," where individuals postpone or avoid decisions due to mental strain.

6.4 Cognitive Dissonance

Conflicting information creates internal discomfort, pushing people to seek confirming data instead of balanced perspectives.

7. Managing Information Stress: Library and Institutional Roles

Libraries and educational institutions play a crucial role in helping individuals manage digital overload. Beyond being repositories of data, they must evolve into curators of clarity.

7.1 Promoting Information Literacy

Workshops on source evaluation, database navigation, and citation management can empower users to handle information critically.

7.2 Simplified Interface Design

Digital repositories should minimize visual clutter and support intuitive search experiences.

7.3 Human Mediation

Librarians can act as research consultants—guiding users toward relevant material, thereby reducing information anxiety.

7.4 Mindful Information Practices

Encouraging students and researchers to pause, reflect, and organize before diving into data fosters intentional, stress-free research.

8. Emotional Intelligence and Digital Well-Being

Psychological resilience in the digital age requires emotional intelligence (EI)—the ability to manage one's emotions in response to digital stress. High-EI individuals regulate frustration, adapt to uncertainty, and maintain focus despite overload.

8.1 Digital Emotional Regulation

Practicing mindfulness and self-awareness helps reduce the anxious compulsion to check or collect endless data.

8.2 Self-Efficacy in Digital Research

Confidence in using digital tools and evaluating sources lowers cognitive stress and fosters a sense of control.

8.3 Institutional Support for Mental Health

Academic spaces can introduce workshops on digital well-being, emphasizing balance between technology use and mental rest.

9. Designing Human-Centred Digital Systems

Technology must adapt to human psychology, not the other way around. **Human-centred design** principles help create systems that respect cognitive limits and emotional needs.

9.1 Minimalism and Focus

Clean interfaces with fewer distractions enhance comprehension.

9.2 Personalization

Adaptive systems can tailor recommendations based on user behaviour, reducing irrelevant results.

9.3 Cognitive Ergonomics

Optimizing visual presentation, font readability, and navigation flow minimizes mental strain.

9.4 AI-Assisted Summarization

AI tools that summarize or highlight key points allow researchers to grasp content faster without exhaustive reading.

Conclusion:

Information anxiety and cognitive overload are not just technological issues—they are psychological realities of the digital age. The more interconnected our world becomes, the greater the need for self-regulation, emotional intelligence, and mindful information consumption. Libraries and research institutions must shift from being data warehouses to being emotional and cognitive support systems for learners. Ultimately, the goal of digital research is not to consume all available information but to cultivate wisdom from within it.

References:

1. Miller, G. A. (1956). *The magical number seven, plus or minus two: Some limits on our capacity for processing information.* Psychological Review, 63(2), 81–97.
2. Sweller, J. (1988). *Cognitive load during problem solving: Effects on learning.* Cognitive Science, 12(2), 257–285.
3. Wurman, R. S. (1989). *Information Anxiety.* Doubleday.
4. Shirky, C. (2008). *Here Comes Everybody: The Power of Organizing Without Organizations.* Penguin Press.
5. Mayer, R. E. (2014). *The Cambridge Handbook of Multimedia Learning.* Cambridge University Press.
6. Rosen, L. D. (2012). *iDisorder: Understanding Our Obsession with Technology and Overcoming Its Hold on Us.* Palgrave Macmillan

KNOWLEDGE IN THE CLOUD: SMART LIBRARIES AND VIRTUAL REPOSITORIES

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Introduction: The Cloud Era of Knowledge

The 21st Century has witnessed a radical transformation in how information is created, stored, accessed, and shared. Libraries, once regarded primarily as physical spaces containing shelves of books and printed materials, are evolving into hybrid digital environments. This shift has been accelerated by technological advancements in cloud computing, artificial intelligence (AI), and information management systems. The emergence of *smart libraries* and *virtual repositories* has redefined not only the concept of knowledge preservation but also the dynamics of learning, teaching, and research.

"Knowledge in the Cloud" signifies a paradigm shift from localized information storage to globally accessible, cloud-based digital ecosystems. This development has enabled institutions to democratize access to information while promoting sustainable and efficient library management. At the same time, it has raised new questions concerning data security, intellectual property, user experience, and the psychological implications of digital research. This chapter examines the evolution, structure, and impact of smart libraries and virtual repositories within contemporary education and research systems

The Evolution of Libraries in the Digital Era

The transformation from traditional to digital libraries is a story of adaptation and innovation. Initially, digitization efforts in the 1990s focused on scanning and archiving printed materials to make them available online. Gradually, digital libraries evolved to include interactive catalogues, e-books, databases, and multimedia content. With the advent of cloud computing, this evolution entered a new phase—one in which physical boundaries were dissolved, and information could be accessed from anywhere at any time.

Cloud-based systems such as Amazon Web Services, Google Cloud, and institutional networks like DSpace and EBSCOhost now serve as foundational infrastructures for many academic libraries. They enable scalability, cost-effectiveness, and collaborative knowledge sharing among institutions. The digital library of today is no longer confined to a campus or

a city; it functions as a global network, hosting millions of digital resources for simultaneous access.

The term *smart library* captures this integration of technology and service. Through AI-driven recommendation systems, RFID-based circulation, and user analytics, libraries are not merely collections but intelligent systems that learn from user behaviour to improve access and engagement. Thus, libraries have evolved from static archives to dynamic digital ecosystems that anticipate and respond to user needs**.**

Understanding Smart Libraries

Definition and Purpose

A *smart library* can be defined as a technologically enhanced learning environment that employs automation, data analytics, and digital communication to provide efficient, user-centred information services. It incorporates cloud storage, AI tools, IoT sensors, and digital reference systems to streamline operations, personalize user experience, and ensure data-driven decision-making.

The core purpose of smart libraries is not only to provide access to information but also to facilitate knowledge creation and collaboration. They act as *knowledge hubs* where students, researchers, and faculty engage in collective inquiry through interconnected digital platforms.

Key Components and Features

Smart libraries commonly include:

- Cloud-based databases: Centralized systems allowing remote and multi-user access.
- AI recommendation engines: Tools that suggest materials based on reading and search patterns.
- Automated circulation systems: RFID and barcode-based systems reducing human error.
- Analytics dashboards: Platforms tracking user engagement, downloads, and resource usage.
- Integrated e-learning support: Linking with virtual classrooms, MOOCs, and digital assignments.

Such systems not only increase operational efficiency but also make libraries adaptable to changing academic environments.

Benefits and Institutional Impact

Smart libraries have been shown to enhance:

- Accessibility: Students can access materials across time zones and devices.
- Efficiency: Automated cataloguing reduces workload for staff.
- Sustainability: Paperless processes reduce environmental impact.
- Collaboration: Cloud integration fosters joint research and global partnerships.

Hence, the smart library is an institution's intellectual backbone—connecting people, data, and innovation.

Virtual Repositories: Preserving and Sharing Knowledge

Concept and Definition

A *virtual repository* is a digital platform designed for long-term preservation and open access to an institution's intellectual output. Unlike databases that provide commercial content, repositories are primarily open-access systems that store research papers, theses, data sets, and educational materials.

Examples include *Shodhganga* in India, *PubMed Central* in the USA, and institutional repositories hosted by universities worldwide. These repositories democratize knowledge by enabling anyone—students, educators, or the public—to access academic content without subscription barriers.

Structure and Function

Most repositories are built using open-source software such as *DSpace*, *EPrints*, or *Fedora Commons*. They are organized with metadata standards (like Dublin Core) that ensure uniformity and easy retrieval. The repository's function extends beyond storage—it ensures:

- Long-term preservation through backup and redundancy.
- Global discoverability through indexing in search engines.
- Citation tracking for research impact measurement.

Repositories thus serve as both archives and visibility tools for researchers and institutions.

Role in Academic Ecosystems

Virtual repositories strengthen academic transparency, prevent duplication of research, and promote interdisciplinary learning. They also encourage *open science*, where knowledge is viewed as a shared resource rather than a proprietary asset.

Knowledge Management and Cloud Technology

The Cloud Advantage

Cloud computing provides the infrastructure necessary for smart libraries and repositories to thrive. It enables scalability—libraries can expand digital collections without physical constraints—and ensures real-time synchronization between systems. For example, a student in India can access materials stored on a university server in the United States within seconds.

Cloud platforms also facilitate data analytics, automatic updates, and cross-platform integration, enhancing both library management and user experience. The result is a seamless, on-demand information environment.

Data Integration and Interoperability

Interoperability—the ability of systems to communicate—is vital in modern library science. Through APIs and linked data technologies, cloud-based systems connect multiple databases and repositories, enabling cross-search and metadata exchange. This integration ensures that information is not isolated within one institution but circulates freely in the academic ecosystem.

Challenges of Cloud Implementation

Despite advantages, cloud-based systems face challenges:

- Cost and subscription models: Dependence on commercial cloud vendors can burden small institutions.
- Data privacy: Ensuring secure access to user and institutional data.
- Technical expertise: Need for trained staff to maintain systems.

Addressing these issues is essential for equitable digital transformation.

The Evolving Role of Library Professionals

From Custodians to Curators

The role of librarians has expanded from custodial management to digital curation. They design user-friendly systems, manage metadata, and facilitate knowledge dissemination. In many institutions, librarians collaborate directly with researchers on data management plans and open-access strategies.

Professional Development

Continuous training in data analytics, coding, AI integration, and copyright law has become essential. Professional associations such as IFLA and ALA emphasize lifelong learning as a professional standard for librarians in the digital age.

Soft Skills and Human Interaction

As technology automates routine tasks, interpersonal skills such as empathy, communication, and problem-solving gain importance. The human connection remains the heart of library service—technology enhances it but does not replace it.

The Future of Smart Libraries and Virtual Repositories

Artificial Intelligence and Automation

AI-driven chatbots, semantic search tools, and predictive algorithms are transforming information retrieval. The next generation of libraries will use natural language processing to interpret user intent, offering context-aware recommendations rather than keyword-based results.

Integration with Learning Management Systems

Libraries are becoming integral to e-learning ecosystems. Integration with platforms like Moodle, Canvas, and Google Classroom allows real-time resource linking and personalized learning pathways.

Sustainability and Global Collaboration

Digital repositories encourage open science and cross-border research collaboration. The future library will function as a sustainable, inclusive, and collaborative knowledge ecosystem that transcends institutional boundaries.

Conclusion:

The movement from traditional shelves to cloud-based systems signifies more than a technological change—it represents a redefinition of knowledge itself. Smart libraries and virtual repositories embody the spirit of open, dynamic, and collaborative learning. By merging cloud technology with human expertise, they ensure that information remains accessible, ethical, and emotionally sustainable.

The challenge ahead is not only to digitize content but to humanize access—to ensure that the pursuit of knowledge remains meaningful, equitable, and empowering in a world increasingly driven by data.

References:

1. Ally, M. (Ed.). (2019). *The mobile learning revolution: Implications for higher education and libraries.* Athabasca University Press.
2. Armstrong, C. J., & Lonsdale, R. (2020). *Digital libraries: Principles and practice in a global environment.* Facet Publishing.

3. Bawden, D., & Robinson, L. (2020). *The dark side of information: Overload, anxiety and other paradoxes and pathologies.* Journal of Information Science, 46(6), 731–743. https://doi.org/10.1177/0165551518769206
4. Chowdhury, G. G. (2018). *Sustainability of digital libraries: A conceptual framework.* Journal of Documentation, 74(3), 512–528.
5. International Federation of Library Associations and Institutions (IFLA). (2019). *Guidelines for smart libraries and digital inclusion.* IFLA Publications.
6. Jain, P. (2019). *Cloud computing and its impact on academic libraries.* Library Hi Tech News, 36(9), 10–14. https://doi.org/10.1108/LHTN-03-2019-0025
7. Kumar, V., & Singh, M. (2022). *Digital repositories and open access initiatives in higher education.* DESIDOC Journal of Library & Information Technology, 42(1), 47–56.
8. Rafiq, M., & Ameen, K. (2019). *Information literacy and digital competence of university students: A study of Pakistan.* Journal of Librarianship and Information Science, 51(1), 220–231.
9. Ray, S. (2021). *Cloud-based libraries and the transformation of knowledge services in higher education.* Library Philosophy and Practice, 1–12.
10. Sahi, S., & Sharma, R. (2023). *The role of artificial intelligence in developing smart libraries: Opportunities and challenges.* International Journal of Information Management, 69, 102–118.
11. Tenopir, C., King, D. W., & Christian, L. (2020). *Scholarly reading and the value of library resources in the digital age.* Library Quarterly, 90(2), 109–132.
12. Wilson, T. D. (2020). *Human information behaviour in the digital environment.* Information Research, 25(4), 1–15.

CITATION IMPACT OF THE TOP TWENTY JOURNALS IN 'ORGANISATIONAL BEHAVIOUR AND HUMAN RESOURCE MANAGEMENT' DURING 2021-2024: AN ANALYSIS

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Abstract:

The paper is designed to study the citation impact of the journals in the category 'Organizational Behaviour and Human Resource Management' as indexed in the Scopus database. The journals in the said subject category have been analysed based on the CiteScores for the period 2021-2024. Then, the top twenty journals in the category of 'Organizational Behaviour and Human Resource Management' as indexed in the Scopus database for the years 2021, 2022, 2023 and 2024 respectively have been enlisted. The top 1% and the top 10% journals in the category of 'Organizational Behaviour and Human Resource Management' have also been analysed. Again, the journals in 'Organizational Behaviour and Human Resource Management' which are among the top 1% journals in other subject categories in which they have been indexed in the Scopus database have also been listed. This paper would be a rich source of information regarding the reputed journals in the field of 'Organizational Behaviour and Human Resource Management'.

Keywords: Organizational Behaviour, Human Resource Management, CiteScore, CiteScore Percentile, Citation, Citation Impact

Introduction:

Management is a process of achieving organizational goals by the optimum utilization of human and other resources.

Every organization is comprised of a number of inter-related sub-systems. One of those sub-systems is the human or social system. The other sub-systems may be the administrative/structural sub-system, informational/decision-making sub-system and economic/ technological sub-system.

The emphasis of the structural or administrative sub-system is on the authority, structure and responsibility within the organization. The informational or decision-making

sub-system stresses on the decision-making and their informational need to keep the entire system active. The economic or technological sub-system emphasizes on the tasks to be performed and their cost-effectiveness in view of the organizational goals. It is necessary that each and every sub-system should keep on functioning properly to keep the entire system healthy. If the entire system functions properly, then each and every sub-system interacts with each other effectively. If a change occurs in one sub-system, it will impact the other sub-system of the organization. Thus, only a single sub-system cannot be given extra importance at the expense of the others.

The concept of organizational behavior means the study of human attitudes, behavior and performance. It studies the ways of behavior of persons in an organization and how those behaviours affect the performance of the organization. According to J.W. Newstrom, "OB is the systematic study and careful application of knowledge about how people as individuals and as groups- act within organizations. It is an action-oriented and goal-oriented discipline. Its goals are to make managers more effective at describing, understanding, predicting and controlling human behavior".

The Organizational Behaviour (OB) can be studied from various angles. One is the Behavioural Approach. The focus of this approach is on the human and social needs. The structure of the organization which is emphasized by the Classical approach to Organizational Behaviour, has no meaning unless the idea is shared with the employees. The Behavioural Sciences Approach evolved from the Hawthorne Experiments. The Hawthorne researchers like Elton Mayo and his Harvard colleagues emphasized the aspect of emotions like feelings and sentiments as responsible for the human behavior and performance in an organization. Among the pioneer scientists involved in the development of 'Behavioural Science Approach' was Abraham Maslow. He developed a "Hierarchy of Human Needs Theory". According to this hierarchy, the work motivation in organizations could be explained. According to him, the humans have five basic needs- physiological needs, safety, social, self-esteem and self-actualisation needs which they try to satisfy in order of their importance. The first three needs- physiological, safety and social are of lower- needs. These are satisfactorily satisfied by the humans. After satisfying these lower-order needs, they approach towards the satisfaction of the higher-order needs like self-esteem and self-actualisation by productively using their energies, talents and resources. According to these scientists, the people should be given greater opportunities to use their abilities and skills so that they can be more productive.

Based on Maslow's "Theory of Hierarchy of Needs", the other scientists like Douglas McGregor, Rensis Likert opined that the structure and the practices of the management should be redesigned and restructured to enable the workers to satisfy their higher-order needs. All the scientists upheld a common view that "the people are basically good and in order to improve their performance, the managers should humanize work. The employees should be treated as assets. Thus, this approach is also known as "Human Resource Approach".

The concept of "Human Resource Management" is closely related to the Human Resource Approach or Behavioural Approach and thus also related to the subject of "Organizational Behaviour" which can be studied from the angle of Behavioural Approach. "HRM is a process of bringing people and organizations so that the goals of each one are met. It tries to secure the best from people by winning their whole-hearted cooperation. It is the art of procuring, developing and maintaining competent workforce to achieve the goals of an organization in an effective and efficient manner." (Rao, 2010, p. 592).

The importance of people has increased in the knowledge-based industries. The success of an organization depends on the knowledge, skills and abilities (KSA) s of its workers. The workers create a set of core competencies which distinguishes the organization from its competitors. An organization can recruit the best employees, achieve its desired goals and get much better results than its competitors by framing appropriate human resource plans and policies.

Objective

The objective of the paper is to measure the citation impact of journals in the category of "Organizational Behaviour and Human Resource Management". The calculation of the citation score is based on the citations received by the documents like articles, reviews, conference papers, book chapters and data papers of a journal over four years, divided by the number of the said type of documents indexed in Scopus and published in the same four years.

For example, 2021 CiteScore counts the citations received to articles, reviews, conference papers, book chapters and data papers of a journal published during the period 2018-2021 and this number is divided by the total number of such types of documents published during the period, 2018-2021.

CiteScore can be represented in the following way:

A= citations received to articles, reviews, conference papers, book chapters and data papers of a journal published during the period 2018-2021.

B= the total number of articles, reviews, conference papers, book chapters and data papers indexed in Scopus and published during the period 2018-2021.

2021 CiteScore = A/B

A CiteScore Percentile is the relative rank of a journal in its subject field. For example, a journal with a CiteScore Percentile of 96% will be ranked according to CiteScore as high or higher than 96% of several titles in the same subject field. A serial title receives a CiteScore Percentile for each subject field in which it is indexed in Scopus. A title with a CiteScore Percentile of 99% in a subject category means it is in the top 1% of the journals in that subject category.

Methodology:

A thorough study of the Scopus database in the category of "Organizational Behaviour and Human Resource Management" was made in order to find out the top twenty journals in this category by studying the CiteScores and the CiteScore Percentiles.

The following tables represent the ranking of the top twenty journals in respect of CiteScore for the year 2021, 2022 and 2023 respectively in the 'Organizational Behaviour and Human Resource Management' category in Scopus database. Besides, the table also represents the subject field in which each title has the highest CiteScore Percentile, that is, the highest rank in the Scopus database.

Table 1: Citescore rank & trend metrics of top 20 journals in organizational behaviour and human resource management category in 2021

Citescore Rank	Source Title	Citescore 2021	Highest Percentile	Category of Highest Percentile
01	'Annual Review of Organizational Psychology and Organizational Behavior'	26.6	99%	Organizational Behavior and Human Resource Management (Rank- 1/213)
02	'Academy of Management Annals'	26.2	99%	Business and International Management (Rank-1/423)
03	'Journal of Service Research'	16.3	99%	Sociology and Political Science (Rank-2/1345)
04	'Leadership Quality'	16.2	99%	Sociology and Political Science 9Rank-3/1345)
05	'Human Resource Management Review'	14.0	97%	Organizational Behavior and Human Resource Management (Rank- 5/213)
06	'Information and Organization'	12.7	98%	Library and Information Sciences (Rank- 4/247)
07	'Research in Organizational Behavior'	12.2	98%	Social Psychology (Rank- 5/296)
08	'Journal of Organizational Behavior'	11.6	99%	Sociology and Political Science (Rank-11/1345)
09	'Journal of Vocational Behavior'	10.0	99%	Education (Rank-13/1406)
10	'Personnel Psychology'	9.4	95%	Organizational Behavior and Human Resource Management (Rank- 10/213)
11	'Sports Management Review'	9.0	94%	Organizational Behavior and Human Resource Management (Rank- 11/213)

12	'Organization and Environment'	8.6	94%	Organizational Behavior and Human Resource Management (Rank- 12/213)
13	'Human Resource Management'	8.4	94%	Organizational Behavior and Human Resource Management (Rank- 13/213
14	'Organization Studies'	8.2	93%	Organizational Behavior and Human Resource Management (Rank- 14/213)
15	'International Organization'	8.1	98%	Law (Rank- 09/801)
16	'International Journal of Human Resource Management'	7.8	95%	Industrial Relations (Rank-03/57)
17	'Human Resource Management Journal'	7.7	92%	Organizational Behavior and Human Resource Management (Rank- 17/213)
18	'Review of Public Personnel Administration'	7.2	95%	Public Administration (Rank-09/190)
19	'Human Resource Development Review'	6.9	91%	Organizational Behavior and Human Resource Management (Rank- 19/213
20	'Work, Employment and Society'	6.8	96%	Sociology and Political Science (Rank-46/1345)

Table 2: Citescore rank & trend metrics of top 20 journals in organizational behaviour and human resource management category in 2022

Citescore Rank	Source Title	Citescore 2022	Highest Percentile	Category of Highest Percentile
01	'Academy of Management Annals'	30.6	99%	Business and International Management (Rank-1/436)
02	'Annual Review of Organizational Psychology and Organizational Behavior'	20.7	99%	Applied Psychology (Rank-2/241)
03	'Journal of Service Research'	17.2	99%	Sociology and Political Science (Rank-5/1415)
04	'Human Resource Management Review'	16.6	98%	Applied Psychology (Rank-4/241)
05	'Leadership Quality'	15.3	99%	Sociology and Political Science (Rank-8/1415)
06	'Journal of Vocational Behavior'	12.8	99%	Education (Rank-12/1469)
07	'Journal of Organizational Behavior'	12.4	99%	Sociology and Political Science (Rank-10/1415)
08	'Information and Organization'	10.7	96%	Library and Information Sciences (Rank-9/266)
09	'Organization and Environment'	10.4	96%	Organizational Behavior and Human Resource Management (Rank- 09/226
10	'Human Resource Management'	10.1	95%	Organizational Behavior and Human Resource Management (Rank-10/226)
11	'International Journal of Human Resource Management'	10.0	94%	Organizational Behavior and Human Resource Management (Rank-12/226)

12	'Organization Studies'	10.0	95%	Organizational Behavior and Human Resource Management (Rank-11/226)
13	'Sports Management Review'	9.5	94%	Organizational Behavior and Human Resource Management (Rank-13/226)
14	'Human Resource Management Journal'	9.3	94%	Organizational Behavior and Human Resource Management (Rank- 14/226)
15	'Human Resource Development Review'	8.9	93%	Organizational Behavior and Human Resource Management (Rank- 16/226)
16	'International Organization'	8.9	99%	Political Science and International Relations (Rank-07/652)
17	'Review of Public Personnel Administration'	8.9	96%	Public Administration (Rank-08/213)
18	'Personnel Psychology'	8.7	92%	Organizational Behavior and Human Resource Management (Rank- 18/226)
19	'European Journal of Work and Organizational Psychology'	8.5	90%	Organizational Behavior and Human Resource Management (Rank- 21/226)
20	'Journal of Occupational and Organizational Psychology'	8.5	91%	Organizational Behavior and Human Resource Management (Rank- 19/226)

Table 3: Citescore rank & trend metrics of top 20 journals in organizational behaviour and human resource management category in 2023

Citescore Rank	Source Title	Citescore 2023	Highest Percentile	Category of Highest Percentile
01	'Academy of Management Annals'	36.0	99%	Business and International Management (Rank-1/443)
02	'Annual Review of Organizational Psychology and Organizational Behavior'	24.2	99%	Social Psychology (Rank- 2/310)
03	'Journal of Service Research'	20.3	99%	Sociology and Political Science (Rank- 3/1466)
04	'Human Resource Management Review'	20.2	98%	Organizational Behavior and Human Resource Management (Rank-4/230)
05	'Leadership Quarterly'	15.2	99%	Sociology and Political Science (Rank- 9/1466)
06	'International Organization'	14.5	99%	Law (Rank-4/1025)
07	'Organization Theory' (Open Access)	13.7	97%	Organizational Behavior and Human Resource Management (Rank- 7/230)
08	'Journal of Vocational Behavior'	13.1	98%	Education (Rank- 24/1543)
09	'Human Resource Management Journal'	11.9	96%	Organizational Behavior and Human Resource Management (Rank- 9/230)
10	'International Journal of Human Resource Management'	11.7	95%	Organizational Behavior and Human Resource Management (Rank- 10/230)

11	'Gender, Work and Organization'	11.5	99%	Gender Studies (Rank- 2/213)
12	'Organization Studies'	11.5	95%	Organizational Behavior and Human Resource Management (Rank-11/230)
13	'Human Resource Management'	11.5	94%	Organizational Behavior and Human Resource Management (Rank- 13/230)
14	'Human Resource Development International'	11.4	94%	Organizational Behavior and Human Resource Management (Rank- 14/230)
15	'Information and Organization'	11.2	96%	Library and Information Sciences (Rank-9/280)
16	'Organization and Environment'	11.2	93%	Organizational Behavior and Human Resource Management (Rank- 16/230)
17	'Journal of Organizational Behavior'	10.5	97%	Sociology and Political Science (Rank- 31/1466)
18	'Personnel Psychology'	10.2	92%	Organizational Behavior and Human Resource Management (Rank- 18/230)
19	'Academy of Management Discoveries'	10.0	97%	Industrial Relations (Rank- 2/60)
20	'Organizational Psychology Review'	10.0	80%	Social Psychology (Rank-14/310)

Table 4: Citescore rank & trend metrics of top 20 journals in organizational behaviour and human resource management category in 2024

Citescore Rank	Source Title	Citescore 2024	Highest Percentile	Category of Highest Percentile
01	'Annual Review of Organizational Psychology and Organizational Behavior'	35.0	99%	Social Psychology (Rank-1/312)
02	'Human Resource Management Review'	24.7	99%	Organizational Behavior and Human Resource Management (Rank-2/234)
03	'Journal of Service Research'	24.6	99%	Sociology and Political Science (Rank-1/1497)
04	'Academy of Management Annals'	23.9	99%	Business and International Management (Rank-3/451)
05	'Leadership Quarterly'	18.3	99%	Sociology and Political Science (Rank-5/1497)
06	'International Organization'	15.3	99%	Political Science and International Relations (Rank-2/738)
07	'Human Resource Management'	14.1	97%	Organizational Behavior and Human Resource Management (Rank-7/234)
08	'Human Resource Management Journal'	13.7	96%	Organizational Behavior and Human Resource Management (Rank-8/234)
09	'International Journal of Human Resource Management'	13.3	96%	Organizational Behavior and Human Resource Management (Rank-9/234)

10	'Organization Theory' (Open Access)	12.9	95%	Organizational Behavior and Human Resource Management (Rank-10/234)
11	'Organization Studies'	12.5	95%	Organizational Behavior and Human Resource Management (Rank-11/234)
12	'Journal of Global Operations and Strategic Sourcing'	12.5	95%	Organizational Behavior and Human Resource Management (Rank-12/234)
13	'Gender, Work and Organization'	12.2	99%	Gender Studies (Rank-2/227)
14	'Journal of Organizational Behavior'	12.0	98%	Sociology and Political Science (Rank-12/1497)
15	'Personnel Psychology'	11.6	93%	Organizational Behavior and Human Resource Management (Rank-15/234)
16	'Information and Organization'	11.6	95%	Library and Information Sciences (Rank-13/287)
17	'Organization and Environment'	11.4	92%	Organizational Behavior and Human Resource Management (Rank-17/234)
18	'Organizational Psychology Review'	11.4	96%	Social Psychology (Rank-11/313)
19	'Global Business and Organizational Excellence'	11.4	92%	Organizational Behavior and Human Resource Management (Rank-19/234)
20	'Journal of Vocational Behavior'	10.8	96%	Education (Rank-54/1620)

Conclusion:

After analyzing the lists of top twenty journals for the years 2021-2024, indexed in Scopus in the subject category of 'Organizational Bahaviour and Human Resource Management', it is evident that ten journals have 99% Highest CiteScore Percentile in some other subject category in which they have been indexed in the Scopus. This means that these ten journals are among the top 1% journals in those subject categories in which they have the Highest CiteScore Percentile.

In case of 'Organizational Behaviour and Human Resource Management' subject category, it is evident that only the journal 'Annual Review of Organizational Psychology and Organizational Behavior' and 'Human Resource Management Review' have 99% Highest CiteScore Percentile during the period between 2021-2023, i.e., they are in the category of top 1% journal in 'Organizational Behaviour and Human Resource Management' within the period 2021-2023, more specifically, in 2021, 'Annual Review of Organizational Psychology and Organizational Behavior' and in 2024, 'Human Resource Management Review'.

The analysis depicts that sixteen journals have at least 90% Highest Citescore Percentile in the subject 'Organizational Behaviour and Human Resource Management' within the period 2021-2024. The journals are as follows:

1) Annual Review of Organizational Psychology and Organizational Behavior
2) Human Resource Management Review
3) Personnel Psychology
4) Sports Management Review
5) Organization and Environment
6) Human Resource Management
7) Organization Studies
8) Human Resource Management Journal
9) Human Resource Development Review
10) International Journal of Human Resource Management
11) European Journal of Work and Organizational Psychology
12) Journal of Occupational and Organizational Psychology
13) Organization Theory (Open Access)
14) Human Resource Development International
15) Journal of Global Operations and Strategic Sourcing

16) Global Business and Organizational Excellence

The analysis of the journals in the subject category of 'Organizational Behavior and Human Resource Management' will help the researchers, the faculties, the students and the other academicians interested in the field of 'Organizational Behavior and Human Resource Management' in gaining information regarding the reputed journals of their field of interest. This will again help them to a great extent in their research and other academic activities.

References:

1. Henry, P., & Blanchard, K. H. (1990). *Management of organizational behavior: utilizing human resources* (5th ed.). Prentice Hall of India.
2. https://www.elsevier.com/connect/editors-update/citescore-a-new-metric-to-help-you-choose-the-right-journal
3. journalinsights.elsevier.com/journals/1090-9516/citescore
4. scopus.com/sources.uri?zone=TopNavBar&origin
5. service.elsevier.com/app/answers/detail/a_id/14880/supporthub/scopus/

EMPOWERING LIBRARIES THROUGH DSPACE: MANAGING DIGITAL KNOWLEDGE

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Abstract:

Open source software greatly benefits the library by simplifying our tasks. DSpace is one such tool designed for managing our digital assets. This study presents DSpace in an easy-to-understand manner. It outlines the primary purpose of this software, its various features, and the advantages and drawbacks it presents. The report illustrates how DSpace effectively manages different kinds of digital files, ensures their long-term preservation, and facilitates open access to information. Additionally, it compares DSpace with other software options like Greenstone, EPrints, and Omeka. The study highlights DSpace's strengths in establishing an institutional repository for our library. Moreover, it reviews the new features introduced in the latest DSpace versions, which include a contemporary user interface and improved workflows for item submissions. The report emphasizes the advantages for both the library and its patrons, demonstrating why DSpace is an essential resource in the current digital landscape. The conclusion urges us to adopt DSpace in our libraries, as it enhances the management of digital resources and promotes global knowledge sharing.

Keywords: Dspace, Open-Source Software, Digital Repositories, Library Management, Knowledge Sharing.

Introduction:

In today's digital world, we need reliable software to manage our digital content like research papers, theses, and videos. DSpace is very useful for this work because it is an open-source digital repository software. It helps us to store, organize, manage and share all our digital materials easily. DSpace was first developed by the Massachusetts Institute of Technology (MIT) and HP Labs. Now it is maintained by the DuraSpace organization, which

is a part of Lyrasis. We can use DSpace to build our institutional repository. This will help us to preserve our digital content and make it available online for students, researchers and the public. All libraries should use such open-source software for managing their digital collections and delivering services. It actually saves the time of the students and library staff.[1]

Purpose of the Study

The purpose of this study is to understand how DSpace software works. It also explains what features it offers for the library, why we should use it, and what its benefits and challenges are. Finally, it shows how DSpace can help us improve services for our users.

Scope of the Study

This report is about DSpace software and how it helps in building digital libraries. We will look at the main goals of DSpace, its benefits and drawbacks. It also covers the new features added in its recent versions. The report explains how DSpace can help academic institutions by making knowledge much easier to access for everyone.

Objectives

The main objectives of this report are:

1. To explain what DSpace is and how it works for managing digital items.
2. To explore the different features that DSpace offers to a library.
3. To identify the advantages and disadvantages of using DSpace software.
4. To describe how DSpace helps both the library and its users in their work.
5. To highlight the new updates that are available in DSpace.
6. To explain why DSpace is a good and useful choice for managing a library's digital content.

Benefits of Using DSpace

1. Another important facility is metadata support. Metadata is information about the digital item, like title, author, and subject.
2. DSpace uses standards like Dublin Core to organize content properly. This makes it easier to search for materials.
3. iv. DSpace also helps in long-term preservation of digital content. Once we upload a document, it stays safe and can be accessed anytime. This is important for keeping academic work available permanently.

4. DSpace is widely used, so it has a strong user community. This means we can get help and share ideas with others using the software.[2]

Disadvantages of DSpace

DSpace also has some challenges.

1. One main disadvantage is that technical knowledge is required to install and maintain DSpace. Libraries may need IT staff to manage the server and fix issues.
2. Also, while the software can be customized, it needs coding skills to change its appearance or features. Libraries without programming support might find it hard to make major changes.
3. In earlier versions, the interface was not very modern. This has improved now, but some organizations may need to upgrade for the best features.
4. Finally, DSpace can be resource-intensive, meaning it requires a good server and regular maintenance to work well.[3]

Dspace Vs other Digital Library Management Software

In today's digital age, many libraries use different digital library software to manage their online collections. Some popular options include Greenstone, EPrints, Omeka, Fedora Commons, and Invenio. Each of these has its own strengths. For example, Greenstone is very useful because it has multilingual support and is often used in developing countries. EPrints is widely used in academic settings for self-archiving research. Omeka facilitates us to create digital exhibits and is used by museums and archives. Fedora Commons offers flexibility and is ideal for complex digital preservation needs. However, DSpace is different from these tools in several key ways. It is specifically designed for institutional repositories, focusing on research output, academic papers, and long-term preservation. DSpace actually saves time by offering strong support for metadata standards, open access, and community-driven collections. Its wide adoption, active development community, and regular updates also make it a more sustainable and reliable choice for universities and research institutions. While other tools may be better for digital exhibits or small-scale projects, DSpace remains one of the most trusted platforms for managing and preserving large academic and research collections.[4]

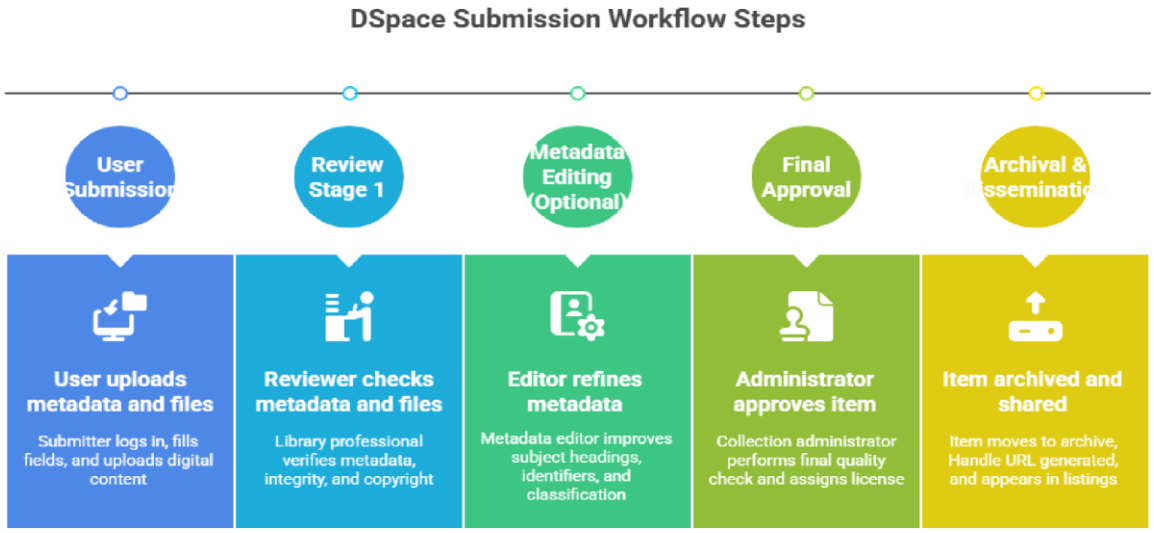
Why Libraries Should Implement DSpace

Libraries should use DSpace because it provides a professional and efficient way to manage digital collections. In academic settings, it helps to store and share research outputs like theses and articles, making them easy to access for students and the public.

By using DSpace, libraries can:

1. Promote open access to knowledge, allowing anyone to view research for free.
2. Increase the visibility of the institution's research online.
3. Preserve important work digitally so it is not lost.
4. Support researchers and students by giving them a platform to share their work.
5. Meet accreditation requirements by showing how research is managed.
6. In short, DSpace helps libraries to go beyond physical books and work effectively in the digital world.[5]

Overview of DSpace Submission workflow Steps



Source- The above image created with Napkin.AI

New Features in DSpace

In the latest versions of DSpace, like version 7, many new features have been added.

1. One big change is the new modern user interface based on Angular. This makes the system look better and easier to use on computers and mobiles.
2. There is a new submission workflow, which makes it easier for authors to upload documents and add metadata. The new design reduces confusion and helps in faster submission.
3. DSpace now supports ORCID integration, which connects authors' profiles with their research. This helps in author identification.
4. The system now has a powerful search and filter option, which allows users to search for materials more easily. They can filter results by author, date, or subject.

5. DSpace also includes an API, which allows it to connect with other systems, like library management software.
6. Other improvements include better security, multilingual support, and faster performance.
7. What Libraries Can Do for Users Using DSpace
8. Using DSpace, libraries can greatly improve services for their users.
9. Libraries can create a user-friendly digital platform where students and researchers can access and download digital content from anywhere. This supports distance learning.
10. DSpace allows users to search and browse digital collections quickly using keywords or authors. Users can also see usage statistics, like how many times their work was downloaded, which is useful for researchers.
11. Institutions can use DSpace to build communities and collections. For example, different departments can have their own sections. This makes it easier to organize materials by subject.
12. DSpace also allows users to submit their own work directly, encouraging knowledge sharing.[6]

Conclusion:

DSpace is a powerful and affordable tool for building digital libraries. It helps institutions organize, preserve, and share their digital content in a professional way. Although it requires some technical skills, its benefits are much greater. With features like open access, modern design, and metadata support, DSpace is a valuable solution for any library that wants to go digital. It supports academic work and ensures that knowledge is preserved for the future.

References:

1. Wani, G. A. (2025, August 20). *A comparative analysis of open source software for integrated library management systems and digital library software: A case study. Academia.edu.* https://www.academia.edu/105909187/A_Comparative_Analysis_of_Open_Source_Software_for_Integrated_Library_Management_Systems_and_Digital_Library_Software_A_Case_Study
2. Sahu, R. R., & Karadia, A. (2025, August 20). *Comparative study of an open source digital library software's for creation of institutional repository. Academia.edu.*

https://www.academia.edu/15295313/COMPARATIVE STUDY OF AN OPEN SOURCE DIGITAL LIBRARY SOFTWARE S FOR CREATION OF INSTITUTIONAL REPOSITORY

3. Aliyu, A. (2014, September 24). *The use of DSpace software in the preservation and management of library resources.* Paper presented at the Kashim Ibrahim Library Senior Staff Seminar. *ResearchGate.* https://www.researchgate.net/publication/264200328 THE USE OF DSPACE SOFTWARE IN THE PRESERVATION AND MANAGEMENT OF LIBRARY RESOURCES By ALIYU ABDULKADIR Being a paper presented at the Kashim Ibrahim Library Senior Staff Seminar on 6
4. Das, A. K. (2015, September 24). *Comparing open-source digital library software: Special reference to DSpace, EPrint and Greenstone. International Journal of Advanced Research in Computer Science and Software Engineering, 5*(7). *ResearchGate.* https://www.researchgate.net/publication/356189325 Comparing Open Source Digital Library Software Special Reference to DSpace EPrint and Greenstone
5. Velmurugan, C. (2013). Open source software: An institutional digital repository system with special reference to DSpace software in digital libraries – An introduction (Review paper). *International Journal of Library and Information Science, 5*(10), 313–318. https://doi.org/10.5897/IJLIS2013.0322
6. Formanek, M. (2023, September). DSpace 7 benefits: Is it worth upgrading? *Information Technology and Libraries, 42*(3). https://doi.org/10.5860/ITAL.V42I3.16209

LEVERAGING AI TOOLS FOR LIBRARY SERVICES AND MANAGEMENT

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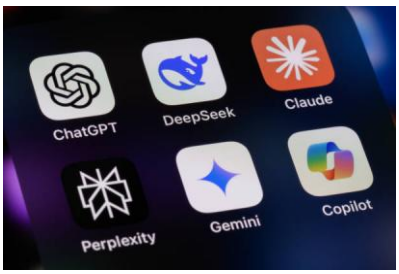
Abstract:

Artificial intelligence (AI) is revolutionizing library services by improving efficiency, accessibility, and user engagement. AI also streamlines cataloging, metadata creation, and content summarization, optimizing internal workflows. By integrating these technologies, libraries can offer personalized, innovative, and user-centered services. AI empowers librarians while enhancing access, engagement, and professional growth in the digital age.

Keywords: Artificial Intelligence, Gemini, Claude, Perplexity, Elicit, Microsoft Designer, Runway ML, otter.ai

Gemini and Claude:



Gemini and Claude are Companions for Communication, Writing, and Creativity. In the world of artificial intelligence, OpenAI's ChatGPT has become a household name. Alongside it, Google's Gemini (formerly Bard) and Anthropic's Claude have also emerged as powerful AI assistants that provide insightful, research-based responses. These three tools can be invaluable for young professionals looking to sharpen their communication skills, improve their writing, and boost creative thinking.

Communication:

- Chatbots and Virtual Assistants: AI-powered chatbots on the library website can handle routine inquiries at all hours. This includes questions about library hours, book locations, and access to digital resources. Human staff can then focus on more complex research.
- Translation Services: AI can translate library materials and communications in real time. This promotes inclusivity and accessibility for non-native English speakers.

- Content Summarization: AI can generate concise summaries of long academic papers and books. Librarians can use these summaries in resource guides and research assistance.
- Metadata Generation and Cataloging: AI can automate the creation of metadata and descriptions for new library acquisitions. This speeds up the cataloging process.
- Editing and Proofreading: AI tools can check documents and promotional materials for grammar and style.
- Report Generation: AI can help draft reports on library usage, user feedback, and collection analytics. This enables data-driven decision-making.
- Content Ideation and Creation: AI can generate ideas for social media posts and event themes. It can also help draft initial content.
- Promotional Materials: AI can help create promotional materials for events or services. This includes generating text and suggesting design concepts.
- Interactive Storytelling and Learning: AI can help develop interactive learning modules or storybooks.
- Digital Exhibitions: AI can generate narratives for online exhibitions.

Perplexity.ai and Elicit.org

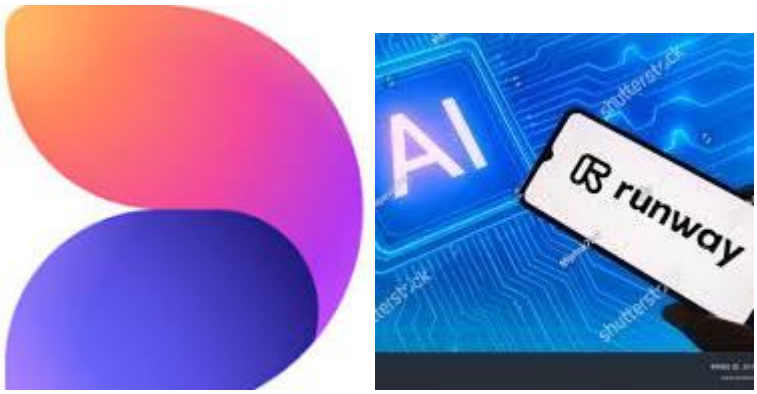
In this era of "information overload," it has become increasingly difficult for young professionals and students to find accurate, reliable information.
To address this challenge, two AI tools Perplexity.ai and Elicit.org have proved extremely useful.

- Perplexity.ai: is an AI-driven search engine that provides concise, contextual, and up-to-date information directly from trusted sources.
  Perplexity AI is an advanced conversational search engine that delivers real-time, source-cited answers by gathering and summarizing information from online and academic databases.

- Reference Services: Librarians can rely on Perplexity to locate reliable, up-to-date responses to patron queries, especially those requiring information not available in the library's internal collections.
- Research Assistance: Perplexity acts as an effective research partner for both librarians and users, offering concise, evidence-backed responses that support fact-checking and preliminary research.
- Information Literacy Instruction: Librarians can integrate Perplexity into teaching sessions to demonstrate how to critically evaluate AI-generated information and the importance of verifying cited sources.
- Content Creation: Library staff can use Perplexity's writing tools to create initial drafts of newsletters, social media updates, and instructional materials, which can then be refined saving time for more complex tasks.
- Collection Development: By using Perplexity, librarians can monitor emerging topics and research trends, ensuring the library's resources remain current and aligned with users' interests.
- File Analysis: With its document upload function, Perplexity enables librarians to efficiently review and summarize internal reports or documents such as usage data or grant applications extracting key insights rapidly.
- Elicit.org: is another remarkable research assistant that helps users efficiently analyze data and insights from academic papers, making the research process far more productive. Elicit.org is an AI-based research tool tailored for academic literature, specializing in conducting literature reviews and extracting data from scholarly publications.
- Literature Review Support: Librarians can help researchers use Elicit to streamline parts of their literature reviews. The tool locates relevant studies using semantic search, summarizes findings, and presents them in comparison tables.
- Systematic Reviews: For in-depth academic projects, Elicit's Pro version provides a structured process for conducting systematic reviews, which librarians can support through advanced research assistance.
- Data Extraction from PDFs: Librarians can use Elicit to pull out targeted details such as research methods, participant numbers, or limitations from uploaded papers, improving efficiency in research and data handling.

- Identifying Research Gaps and Trends: Elicit assists users in detecting recurring patterns, central themes, and gaps in existing research by analyzing a wide range of academic literature, which librarians can highlight during consultations.
- Citation Management Integration: Elicit allows exporting data in formats like BibTeX or RIS, compatible with citation tools such as Zotero, helping librarians demonstrate effective citation management techniques.
- Information Synthesis Training: Librarians can showcase Elicit's ability to generate summary tables from multiple studies in workshops, teaching researchers how to synthesize information effectively for academic writing.

Microsoft Designer and Runway ML



For professionals working in marketing, social media, or presentations, strong design skills are a valuable asset. These tools make it easier than ever to create visually appealing and professional designs**.**

Microsoft Designer is a smart design tool that integrates with PowerPoint and Outlook, automatically suggesting creative layouts and visual styles. Meanwhile, Runway ML is a next-generation video editing platform powered by AI. Features like background removal, automatic captioning, and text-based editing have simplified video production dramatically, even for those without prior editing experience.

AI-powered creative tools such as Microsoft Designer and Runway ML can be effectively used in libraries to improve communication, develop engaging content, and make everyday operations more efficient. Microsoft Designer specializes in producing professional graphic designs, while Runway ML offers advanced tools for video and multimedia creation.

Microsoft Designer is an AI-based design tool that enables library staff to create high-quality visual materials easily, even without prior design expertise.

Marketing and Promotion:

- **Flyers and Posters:** Quickly design appealing flyers and posters for upcoming library programs, workshops, and reading events using text prompts and ready-made templates.
- **Social Media Posts:** Produce eye-catching social media graphics with AI-generated captions and hashtags to attract community engagement.
- **Invitations and Greeting Cards:** Craft personalized invitations for library celebrations, holiday programs, or volunteer recognition events.

Educational Materials:

- **Infographics:** Develop clear, easy-to-understand infographics that explain library services, research strategies, or digital literacy concepts.
- **Signage:** Design professional, uniform signs for various library areas, operating hours, or important announcements.

Image Editing:

- **Photo Enhancement:** Use AI features to clean up and enhance images by removing backgrounds or unwanted objects from photos of library events or spaces.
- **Custom Image Generation:** Generate unique AI-created visuals that represent abstract topics (e.g., *intellectual freedom* or *digital literacy*) for presentations, brochures, or teaching resources.

Runway ML

Runway ML provides a set of AI tools designed for multimedia and video production, allowing librarians to create high-quality visual content with minimal technical skill.

Instructional Content:

- **Tutorial Videos:** Produce short, engaging videos that teach users how to access databases, use online catalogs, or explore digital collections. AI tools like text-to-video and voice generation can simplify video creation.
- **Video Announcements:** Make dynamic video messages to promote new library resources, services, or events, complete with customized effects and transitions.

Creative Programming:

- **Digital Storytelling Workshops:** Facilitate workshops where participants use Runway ML's text-to-video or text-to-image tools to bring their stories to life as short films or visual narratives.

- **Virtual Exhibits:** Build interactive digital exhibits using video editing tools such as style transfer to animate historical photographs or documents.

Archival and Accessibility:

- **Transcription:** Apply AI transcription tools to convert audio recordings like oral histories or guest lectures into searchable, accessible text documents.
- **Object Detection:** Utilize AI's object recognition capabilities to tag and describe items in video archives, improving organization, metadata quality, and searchability

Otter.ai

Meetings often contain important information, but manually taking notes, transcribing discussions, and tracking action items can be time-consuming and tedious, this is where Otter.ai becomes invaluable.

- Otter.ai automatically converts speech to text in real time and creates searchable meeting notes.
- It helps save time, increases productivity, and ensures that no important information is ever lost.
- Otter.ai is a powerful tool that can greatly support library operations by boosting staff efficiency, improving accessibility for both users and employees, and enhancing the organization and sharing of information.
- By automating documentation and transcription, it allows librarians to dedicate more time to essential services such as research assistance and collection development.

Meetings and Administrative Tasks:

- **Automated Note-Taking:** Library staff can use Otter.ai to capture and transcribe internal meetings, committee discussions, or staff training sessions in real time, removing the need for manual note-taking.
- **Summary and Action Item Creation:** The platform automatically produces concise meeting summaries and highlights action items, helping staff stay organized and ensuring that key tasks are completed.

- **Knowledge Management:** Saved transcripts form a searchable digital archive, making it easy for staff to revisit previous discussions, decisions, and project details without sorting through unstructured notes.
- **Accessibility and Inclusive Services: Real-Time Captioning:** Otter.ai offers live captioning for virtual (Zoom, Google Meet, Microsoft Teams) and in-person programs, improving accessibility for participants who are deaf, hard of hearing, or have auditory processing challenges.
- **Assistive Technology for Students and Patrons:** Especially in academic libraries, Otter.ai can be provided as an accessibility tool for students with disabilities to record and review lectures or study materials, fostering a more inclusive learning environment.

Research and Content Creation:

- **Interview and Oral History Transcription:** Librarians and researchers can rely on Otter.ai to quickly transcribe interviews and oral history recordings for archives or research purposes, significantly reducing manual effort.
- **Content Repurposing:** Audio from events, podcasts, or presentations can be converted into searchable text and reused to create articles, blog posts, or captions, helping libraries extend the impact of their content.
- **Brainstorming and Writing Support:** Staff can record spoken brainstorming sessions and use the resulting transcripts as initial drafts for reports, grant applications, or educational materials streamlining the writing process and encouraging idea development.
- By integrating Otter.ai into daily operations, libraries can work more efficiently, provide greater accessibility, and better meet the varied needs of their communities.

Conclusion:

Perplexity.ai and Elicit.org serve as smart partners for research, while Microsoft Designer and Runway ML make creativity simple. Otter.ai offers smarter meeting notes with less effort. Librarians can use these tools to streamline operations, create engaging content, and provide more personalized services. Together, these AI tools not only enhance the efficiency and productivity of professionals but also help them maintain mental balance and personal time both essential in today's fast-paced work culture.

References:

1. Asemi, A., & Asemi, A. (2018). *Artificial intelligence application in library systems in Iran: A taxonomy study. Library Philosophy and Practice.* Retrieved from http://digitalcommons.unl.edu/libphilprac/1840
2. Bhui, T. (2024). *Transforming libraries with artificial intelligence: A comprehensive exploration of applications and implications. International Research Journal of Modernization in Engineering Technology and Science.* https://doi.org/10.56726/irjmets50628
3. Akinola, S. A. (2023). *Capabilities and apparent implications of artificial intelligence (AI) adoption in Nigerian academic libraries. University Library at a New Stage of Social Communications Development Conference Proceedings, 8,* 283–289.
4. Subaveerapandiyan, A., & Gozali, A. A. (2024). *AI in Indian libraries: Prospects and perceptions from library professionals. Open Information Science, 8*(1). https://doi.org/10.1515/opis-2022-0164
5. Twomey, B., Johnson, A., & Estes, C. (2024). *It takes a village. Information Technology and Libraries, 43*(3). https://doi.org/10.5860/ital.v43i3.17243
6. Nie, B., Wang, T., Lund, B. D., & Chen, F. (2022). *How does AI make libraries smart?* In *Advances in Library and Information Science (ALIS) Book Series* (pp. 43–58). https://doi.org/10.4018/978-1-7998-8942-7.ch003
7. Singh, A., Patel, S., & Gupta, R. (2023). *AI-driven data analytics in libraries: Facilitating informed decisions for acquisitions and services. Journal of Library Innovation, 14*(1), 48–60. https://doi.org/10.1108/JLI-01-2023-0024
8. Zondi, N. P., Epizitone, A., Nkomo, N., Mthalane, P. P., Moyane, S., Luthuli, M., ... & Phokoye, S. (2024). *A review of artificial intelligence implementation in academic library services. South African Journal of Libraries and Information Science, 90*(2), 1–8.
9. Anderson, M., Taylor, P., & Wang, L. (2022). *AI and automation in library services: Enhancing efficiency and productivity. Journal of Library Technology, 35*(2), 112–128. https://doi.org/10.1108/JLT-04-2022-0010
10. Jayachristrayar, S., & Hemapriyaa, S. (2023). *Transforming libraries: Applications of artificial intelligence in library services. Gyankosh – The Journal of Library and Information Management, 14*(1–2), 61–71.
11. Jha, S. K. (2023). *Application of artificial intelligence in libraries and information centers services: Prospects and challenges. Library Hi Tech News, 40*(7), 1–5.

THE ROLE OF ICT IN CHANGING LIBRARY SERVICES

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Abstract:

Information and Communication Technology (ICT) has revolutionized the functioning of libraries worldwide. The integration of ICT has transformed libraries from traditional repositories of books into dynamic centers of digital learning and knowledge dissemination. This paper explores how ICT has reshaped library services, enhanced user experience, and improved access to information resources. It also discusses the challenges faced by libraries in adopting ICT and suggests strategies for effective implementation.

Keywords: ICT, Library Services, Digital Libraries, Information Management, Automation, E-resources

Introduction:

Libraries have historically been described as the "temples of knowledge." For centuries, their role was primarily to collect, organize, and provide access to books, journals, and other printed resources. Information retrieval was largely manual — users had to search card catalogs, browse shelves, or rely on librarians' guidance.

The emergence of Information and Communication Technology (ICT) has significantly impacted every aspect of human activity, including education, communication, and information management. Libraries, as vital centers for information access and dissemination, have undergone a paradigm shift in their operations due to ICT adoption. Traditionally, libraries served as storehouses of printed materials such as books, journals, and manuscripts. However, the digital revolution has transformed them into hybrid and virtual spaces offering a range of electronic resources and services. ICT tools have enhanced the efficiency, accessibility, and interactivity of library services, enabling librarians to cater to the changing information needs of users in the 21st century.

Evolution of Library Services through ICT:

Historically, library services were manual and time-consuming. Users relied heavily on card catalogues, printed indexes, and physical searches to locate information. The introduction of ICT brought automation and digitization, which have made library services more user-friendly and efficient.

Automation systems such as *Integrated Library Management Systems (ILMS)* and *Online Public Access Catalogues (OPAC)* have simplified cataloguing, circulation, and acquisition processes. Libraries have transitioned from manual record-keeping to electronic databases that allow instant retrieval of information. The emergence of the internet and digital communication platforms has further expanded library access beyond physical boundaries, enabling remote use of library resources through online portals and mobile applications.

ICT-Enabled Library Services:

ICT has introduced a wide range of new services that have redefined the traditional concept of library operations. Some of the most significant ICT-enabled services include:

1. **Online Public Access Catalogue (OPAC):**
   OPAC allows users to search, locate, and reserve library materials through digital catalogues accessible via the internet. This system has replaced traditional card catalogues, making searches faster and more accurate.
2. **Digital and Electronic Resources:**
   Libraries now subscribe to electronic journals (e-journals), e-books, databases, and multimedia resources. Digital libraries such as *DOAJ*, *JSTOR*, and *Project Gutenberg* have become integral parts of academic and research institutions.
3. **Institutional Repositories:**
   ICT enables libraries to develop institutional repositories that store and preserve scholarly works produced by faculty and students, including theses, dissertations, and research papers.
4. **Interlibrary Loan and Resource Sharing:**
   ICT has made it possible for libraries to collaborate and share resources through networks like *DELNET* and *INFLIBNET* in India. This system enhances access to information that may not be available in a single library.
5. **Reference and Information Services:**
   Digital reference services, including chat reference, email assistance, and AI-based query systems, have replaced traditional face-to-face reference desks.
6. **Current Awareness Services & Selective Dissemination of Information:**
   Using ICT, libraries provide personalized updates to users about new resources or research developments in their area of interest.

7. **Remote Access and Mobile Services:**
   Through remote authentication systems, users can access e-resources from anywhere. Mobile applications and cloud-based library systems further enhance user engagement.

Benefits of ICT in Library Services:

The integration of ICT in libraries has resulted in numerous benefits for both librarians and users:

1. **Enhanced Accessibility:** Users can access information anytime and anywhere, breaking geographical and temporal barriers.
2. **Efficiency in Operations:** Automation reduces manual effort, streamlines workflows, and minimizes errors in cataloguing and circulation.
3. **Improved User Experience:** ICT tools provide interactive and customized services, improving user satisfaction.
4. **Preservation and Security:** Digitization helps preserve rare and fragile documents and ensures long-term access.
5. **Collaboration and Networking:** ICT promotes collaboration among libraries, institutions, and researchers through resource-sharing networks.

Challenges in ICT Implementation

Despite its numerous advantages, the integration of ICT in library services faces several challenges, especially in developing countries.

1. **Financial Constraints:** The cost of ICT infrastructure, maintenance, and software licensing can be high, particularly for smaller institutions.
2. **Lack of Skilled Personnel:** Many library professionals require continuous training to keep pace with emerging technologies. The digital divide among staff affects the efficiency of ICT-based services.
3. **Technological Obsolescence:** Rapid technological changes make hardware and software systems obsolete quickly, necessitating frequent updates and replacements.
4. **Digital Divide and User Awareness:** Not all users possess the digital literacy required to fully utilize ICT-enabled library services.
5. **Copyright and Licensing Issues:** Digital content management involves complex copyright regulations, which may restrict access or usage.
6. **Infrastructure Limitations:** Inadequate internet bandwidth, power interruptions, and lack of reliable technical support hinder smooth ICT operations in some libraries.

The Role of Librarians in the ICT Era

In the ICT-driven library environment, librarians are no longer mere custodians of books but *information managers and digital curators*. They are expected to:

- Acquire technological competencies in digital cataloguing, database management, and information retrieval.
- Train users in digital literacy and information-seeking skills.
- Develop and manage digital collections, institutional repositories, and e-resources.
- Implement and maintain ICT infrastructure, ensuring data security and accessibility.
- Facilitate open access initiatives and support research data management.

The changing role of librarians emphasizes continuous professional development and adaptation to emerging technologies.

Conclusion:

The role of ICT in changing library services is profound and transformative. ICT has redefined how information is acquired, organized, preserved, and disseminated. Modern libraries have evolved into hybrid spaces that blend traditional and digital resources, catering to the diverse needs of users in the knowledge society. While challenges such as funding, training, and infrastructure persist, the benefits of ICT far outweigh the difficulties. The future of library services lies in embracing emerging technologies such as artificial intelligence, cloud computing, and big data analytics to enhance information access and management. Thus, ICT continues to be the driving force behind the modernization and sustainability of library services in the digital age.

References:

1. Ashiq, M., Mahmood, K., & Nawaz, H. (2022). Transformation of libraries during the Covid-19 pandemic. *Journal of Academic Librarianship, 48*(5), 102573. https://doi.org/10.1016/j.acalib.2022.102573
2. Chisita, C. T. (2020). Digital transformation and the future of African libraries. *IFLA Journal, 46*(1), 68–75. https://doi.org/10.1177/0340035219893356
3. IFLA (International Federation of Library Associations and Institutions). (2022). *Libraries in the digital age: IFLA guidelines and reports.* https://www.ifla.org
4. Kumar, V., & Sahu, R. (2019). ICT in libraries: Changing role of library professionals. *Library Herald, 57*(2), 165–178.

5. Lo, L. S. (2024). Transforming academic librarianship through AI reskilling. *International Journal of Information Management, 72*, 102679. https://doi.org/10.1016/j.ijinfomgt.2023.102679
6. Mahmood, K. (2020). Impact of ICT on library and information science education. *Information Development, 36*(4), 510–521. https://doi.org/10.1177/0266666919884371
7. Shastri, D. K., Chandel, A. S., & Sharma, M. (2021). The perception of ICT skills and challenges of usage among library professionals. *Library Philosophy and Practice (e-journal).* https://digitalcommons.unl.edu/libphilprac/5708
8. Sharma, P., & Kumar, A. (2021). ICT applications in libraries: Opportunities and challenges. *International Journal of Research in Library Science, 7*(1), 56–64.
9. Singh, J., & Kataria, S. (2020). Role of ICT in academic libraries: A review of the literature. *International Journal of Library and Information Studies, 10*(2), 45–53.
10. Wheeler, T. R., & Delgado, D. (2022). Transforming and extending library services by embracing technology and collaborations: A case study. *Health Information & Libraries Journal, 39*(4), 350–357. https://doi.org/10.1111/hir.12430

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ADVANCES IN LIBRARY AND INFORMATION SCIENCE: TRANSFORMING THE PROFESSION

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Abstract:

The field of Library and Information Science (LIS) is undergoing a rapid and multidimensional transformation driven by digital innovation, artificial intelligence, open science, and changing user expectations. This article explores the major advances redefining contemporary library and information services, focusing on digital transformation, artificial intelligence (AI) and machine learning applications, open access and research support, data analytics and user engagement, evolving library spaces, and emerging professional competencies. The discussion highlights how libraries are shifting from traditional repositories of printed materials to dynamic, user-centric, data-driven, and collaborative knowledge ecosystems. Integrating technologies such as cloud computing, IoT, and AI-based metadata systems has improved efficiency, accessibility, and personalization, while open science initiatives and institutional repositories are reshaping scholarly communication. At the same time, libraries are evolving into inclusive community hubs that promote equity, diversity, and lifelong learning. The article also identifies key challenges—such as infrastructure limitations, skill gaps, digital divides, and ethical issues—particularly within the Indian context. It concludes with strategic recommendations for integrating advanced technologies, building professional capacities, and redesigning LIS curricula to align with global trends. Overall, this review emphasizes that the future of LIS lies in its ability to balance technological innovation with human-centered, equitable, and sustainable information practices.

Keywords: Library Transformation, Digital Innovation, Artificial Intelligence, Open Science, Data Analytics, User Engagement, Professional Competencies.

Introduction:

The field of Library and Information Science (LIS) is witnessing a remarkable transformation from its traditional focus on physical collections, cataloguing, and reading rooms to a more dynamic, technology-driven discipline. Modern libraries are embracing

digitization, open access resources, artificial intelligence, and data analytics to enhance information retrieval and user experience. These advancements have redefined the role of libraries from repositories of books to active knowledge hubs that facilitate learning, research, and innovation.

In the Indian context—and globally—libraries are responding to the changing demands of higher education, diverse user expectations, and the expanding global information network. The integration of digital literacy, new space design, and community engagement reflects the evolving mission of libraries as inclusive and interactive environments. To remain relevant, institutions must invest in developing professional competencies, fostering open science, and ensuring equitable access to information. The ongoing evolution of LIS underscores the importance of adaptability, innovation, and collaboration in shaping libraries that are not only technologically advanced but also socially responsive and aligned with educational and societal goals.

As libraries transition into digital and hybrid ecosystems, the role of librarians is also evolving significantly. Librarians are no longer mere custodians of books but are becoming information managers, digital curators, and knowledge facilitators. They are required to develop new skills in metadata management, digital preservation, research data handling, and the use of artificial intelligence tools. Continuous professional development, interdisciplinary collaboration, and technological adaptability have become crucial for success in this changing environment. Moreover, the ethical aspects of information access, data privacy, and intellectual property rights are gaining prominence, making librarians vital players in shaping the future of knowledge management.

In this article, focus given on key advances in LIS under several thematic headings:

1. Digital-transformation of library services;
2. Artificial intelligence, machine learning and metadata innovation;
3. Open science, open access and research support services;
4. Data analytics, user engagement and personalization;
5. New forms of library spaces, community outreach and equity;
6. Professional development, staff skills and future competencies; and
7. Challenges and recommendations for the indian context.

1. Digital Transformation of Library Services

A foundational advance in LIS is the migration from traditional print-centric services to digital, networked, and user-centric models. Information and Communication

Technologies (ICT) have reshaped how library collections are managed, discovered, delivered and preserved (1,2).

Key sub-trends include:

- **Electronic Resource Management (ERM):** As more journals, e-books, streaming media and other digital materials become core library holdings, ERM systems track licences, usage, access rights, cost-effectiveness and user behaviour. (3)
- **Cloud computing and federated search systems:** These permit distributed collections, shared discovery interfaces, and scalability of library services without requiring all holdings on-site. (4)
- **Digitisation and virtual reference:** Libraries increasingly provide remote access to resources, online reference chatbots, virtual reading rooms. The convenience and accessibility of library services have extended beyond physical hours and sites.
- **Internet of Things (IoT), RFID, and automation in operations:** For example, libraries using RFID tags for automated circulation, self-service kiosks, inventories, and spatial tracking. (5)
- **Digital preservation and archive continuity:** With the proliferation of born-digital materials and the risk of obsolescence, libraries have to invest in long-term access strategies. (6)

These developments signify a shift libraries are no longer simply repositories of books; they are dynamic, digital gateways to knowledge. For Indian institutions, where digital access remains unequal, this transformation presents both opportunity and challenge.

2. Artificial Intelligence, Machine Learning, and Metadata Innovation

One of the most significant advances in recent years is the integration of artificial intelligence (AI) and machine learning (ML) into library services, metadata modelling, discovery and user engagement. A systematic review of AI/ML applications in libraries found that while much of the work remains theoretical, empirical studies are beginning to emerge. (7)

Key aspects here include:

- **Chatbots and virtual assistants:** Libraries are employing AI-powered chatbots to handle routine patron queries, guide information searches, assist in resource access, and free human staff to focus on complex tasks. (8)

- **Automated metadata generation and enhancement:** AI is being used to assist in metadata creation, classification, entity extraction, semantic linking and ontology building. An example is a recent proposal for a generative AI-driven metadata modelling approach. (9)
- **Predictive analytics for collection development:** Machine learning algorithms analyse user behaviour, circulation patterns and external trends to support decisions about acquisitions, weeding, and resource allocation. (10)
- **Semantic web, linked data and open metadata ecosystems:** Libraries are increasingly publishing linked open data, making collections interoperable, machine-readable and reusable beyond the library. (11)
- **Ethical issues, bias and transparency:** The adoption of AI also raises challenges: bias in algorithms, vendor dependence, data privacy, and equity. For example, a study of automated diversity audits in public libraries highlighted concerns about flattening local complexity and over-reliance on vendor norms. (12)

For Indian academic libraries, integrating AI offers potential to enhance discovery, multilingual access, user recommendation and digital scholarship, but it also requires investment, staff capacity and institutional policies for ethical use.

3. Open Science, Open Access and Research Support Services

Another major frontier is the role of libraries in the scholarly communication ecosystem, especially around open science (OS), open access (OA), reproducibility, data management and research support.

Salient developments include:

- **Institutional repositories and open access mandates:** Libraries are increasingly managing their institutions' repositories, negotiating transformative agreements with publishers, advocating for OA policies. (13)
- **Data management, curated research data services and stewardship:** As research becomes data-rich, libraries are providing or partnering in data curation, metadata, repository support, long-term storage, and researcher training. (14)
- **Open educational resources (OER) and open pedagogy:** Libraries support the creation, discovery and reuse of open textbooks, multimedia and teaching resources, aligning with institutions' teaching missions. (15)

- **Research impact services, bibliometrics, altmetrics:** Libraries are offering services that help faculty analyze their research impact, manage ORCID profiles, and track open citations. (16)
- **Equity, diversity and inclusion in knowledge access:** OA and OS are often framed as equity issues — libraries play a role in reducing information barriers for researchers in developing countries or non-commercial settings.

In the Indian higher-education context, these roles are critical—especially as funding agencies increasingly mandate open access and data sharing—and libraries must position themselves as strategic partners in research rather than simply service units.

4. Data Analytics, User Engagement and Personalisation

Closely aligned with the digital and AI trends, libraries are also embracing data analytics, user-centric services, engagement strategies, and personalisation of experiences. This marks a cultural shift: from "library as storage" to "library as experience and service". A recent article summarises: "User engagement: Libraries are focusing on user engagement by providing personalized services, creating interactive spaces, and offering virtual services." (17)

Important elements include:

- **User behaviour analytics and dashboards:** Libraries collect data on circulation, database usage, web logs, search patterns and use analytics to drive decision-making in collections, instruction and space design. (18)
- **Personalised recommendation and discovery interfaces:** Borrowing from e-commerce, libraries are exploring recommendation engines to suggest books, articles or media based on user profiles and behaviour. Some AI tools assist this. (19)
- **Engagement through digital services and outreach:** This includes makerspaces, virtual reality/augmented reality experiences, mobile apps, social-media integration of library services, virtual events and online workshops.
- **Flexible library spaces and learning commons:** Libraries redesign physical spaces to support collaborative learning, creation, digital tools, informal study, and social interaction, reflecting user needs for flexible engagement. (20)

In practice, Indian libraries—especially in universities—can benefit by integrating data analytics (even basic dashboards), designing user experience (UX) initiatives, and moving beyond static catalogues to proactive engagement with students and faculty.

5. New Forms of Library Spaces, Community Outreach and Equity

Beyond technology and digital transformation, advances in LIS are visible in how libraries position themselves as community hubs, learning centres, social equity agents, and flexible physical and virtual spaces.

Key trends include:

- **Flexible, hybrid spaces (learning commons):** Libraries are evolving into spaces where students collaborate, create, access digital tools, and engage in interdisciplinary learning. The 'learning commons' model emphasises technology-rich, rearrangeable spaces rather than traditional stacks. (21)
- **Community engagement, outreach and makerspaces:** Libraries organise workshops, makerspace sessions, digital literacy initiatives, local history digitisation projects, and partnerships with community organisations. These extend the library's role beyond academia or public lending (22).
- **Equity, diversity, inclusion and accessibility (EDIA):** As information professionals increasingly recognise the role of libraries in social justice, libraries adopt inclusive collection policies, services for underserved communities, multilingual and accessible formats, and inclusive design. For example, the International Federation of Library Associations and Institutions (IFLA) identified EDIA as one of the top competencies for new and emerging library workers. (23)
- **Sustainability and green libraries:** Libraries are increasingly aware of environmental footprint, sustainable operations, digital-first strategies to reduce paper, and adoption of eco-friendly infrastructure. (24)

In India, where libraries often serve as the only accessible information centre in rural or disadvantaged areas, the outreach and equity dimension is especially relevant. Designing services for local languages, inclusive formats, mobile access, and community-based programming are vital.

6. Professional Development, Staff Skills and Future Competencies

With all these advances, the role of the library/information professional is changing dramatically. The emergence of new tools, new user needs, and new operational models demands new competencies. A survey by IFLA noted the top topics for LIS education globally: new professional competencies, AI in LIS education, data science in LIS, and EDIA.

Aspects include:

- **AI literacy and digital skills:** Librarians need to understand, evaluate and work with AI tools, alongside automation and algorithmic systems. (25)
- **Data science, analytics and evidence-based practice:** Professionals increasingly use data to make decisions, support research, measure impact and demonstrate value.
- **Change management, user experience design and service innovation:** Library staff must transition from static roles to service designers, user-experience architects, digital strategists and educators. (26)
- **Advocacy, ethical leadership and sustainability:** Given tightened budgets, evolving mandates and emerging technologies, information professionals must advocate for library value, ensure responsible practices (privacy, bias, inclusivity), and lead strategic shifts.
- **Collaborative and interdisciplinary skills:** Modern libraries collaborate with IT departments, academic faculties, community organisations, digital humanities teams, makerspaces, and open education initiatives.

For Indian LIS programmes, this implies we need to embed modules on AI, data analytics, digital scholarship, user experience design, and community engagement, rather than just classical cataloguing and classification.

7. Challenges and Implications for Indian Library & Information Science

While the advances are significant and the opportunities numerous, they come with challenges—particularly in the Indian higher education and public library environment. Some of the key issues include:

- **Resource and infrastructure constraints:** Many libraries in India face budgetary limitations, inadequate IT infrastructure, slow internet connectivity, limited digital collections, and lack of staff training. Adoption of advanced technologies (AI, data analytics, digitisation) may be constrained.
- **Skills gap and training needs:** The new competencies required may not yet be fully represented in LIS curricula, and practising professionals may require upskilling, continuing professional development, and institutional support.
- **Digital divide and access equity:** While digital transformation enables remote access, many communities still lack reliable broadband, devices, or digital literacy. Libraries must balance high-tech ambitions with inclusive, low-barrier services.

- **Sustainability and cost of digital subscriptions:** As digital resources become central, libraries face issues of licensing costs, vendor lock-in, and sustainability of streaming services or e-book lending. A 2025 forecast noted that library digital collections are reaching a tipping point due to rising costs. (27)
- **Ethical, privacy and governance issues:** As libraries adopt AI, analytics and digital platforms, issues of data privacy, algorithmic bias, vendor dependence, and governance frameworks become important. The automated diversity audit study highlighted such concerns.
- **Change management and institutional culture:** Shifting from traditional librarian roles to strategic digital services requires organisational change, leadership, stakeholder buy-in, and new workflows.

For India, the implications are clear: libraries must focus on building digital infrastructure, investing in staff development, forging collaborations (e.g., consortia for digital access), adopting open science and OER models appropriate for local context, and designing services that support linguistic, regional, and educational diversity.

8. Recommendations for Practice and LIS Education

To capitalise on these advances and mitigate challenges, I offer the following recommendations for libraries (academic, public and special) and LIS education programmes, particularly in the Indian context:

i. **Adopt a strategic vision for digital transformation.** Libraries should develop multi-year plans that align with institutional mission, user needs, digital scholarship, open science and community outreach. Early piloting of services (e.g., chatbots, usage analytics) can build momentum.

ii. **Invest in staff development and digital competencies.** Organise regular training on AI, data analytics, metadata modelling, user-experience design, digital preservation and open access. Encourage LIS education institutes to update curricula accordingly.

iii. **Promote open access, open science and research support roles.** Libraries should position themselves as key partners in research institutions, managing institutional repositories, supporting data curation, researcher training, bibliometrics, and open pedagogy.

iv. **Leverage analytics and evidence-based decision-making.** Collect and analyse usage data, internal metrics, user feedback, and external benchmarks to inform

collections, services and spaces. Use dashboards and visualisations to communicate value to stakeholders.

v. **Design user-centric and inclusive services.** Employ user experience (UX) methods, co-creation with users, flexible spaces (learning commons), digital outreach (mobile apps, virtual services), and inclusive design (multilingual, accessible, underserved communities).

vi. **Explore AI and machine learning responsibly.** Pilot AI tools for metadata, discovery, chatbots and analytics, but ensure frameworks for evaluation, bias mitigation, transparency, vendor independence and professional oversight.

vii. **Build partnerships and consortia.** Shared digital platforms, inter-library loan, licence negotiation consortia, open access collaborations, community partnerships can yield cost efficiencies and broader impact.

viii. **Ensure sustainability and scalability.** When adopting digital collections, subscriptions or services, consider long-term funding models, digital preservation, infrastructure resilience, and community relevance.

ix. **Embed equity, diversity and local relevance.** Especially in India, libraries must reflect local languages, cultural heritage, regional research, access for disadvantaged communities, and community knowledge systems. IFLA identifies EDIA as core for future professionals.

x. **Update LIS curricula to reflect evolving roles.** LIS programmes should include modules on digital scholarship, AI in libraries, metadata, UX design, data science for librarians, open science, community engagement and sustainability. Traditional subjects (cataloguing, classification) remain relevant but should be reframed in digital contexts.

Conclusion:

The advances in Library and Information Science are profound. From digital transformation and AI integration to open science services, analytics-driven engagement, flexible library spaces and new professional competencies, the library of the future is a dynamic, strategic, inclusive, and tech-savvy institution. For India, these advances offer exciting opportunities but also demand careful planning, investment in human and technical resources, equitable service design and strong alignment with institutional and community goals.

As LIS educators and professionals, we must embrace change, lead innovation and advocate for the library's central role in knowledge creation, access and engagement. Our task is not merely to manage books and journals but to orchestrate knowledge ecosystems—responding to users, harnessing technology responsibly, upholding equity, and advancing research, education and lifelong learning.

The library is no longer just a storehouse of information—it is a hub of discovery, collaboration, digital scholarship and community connection. The advances outlined above signal a transformation whose full implications are yet to be realised—but whose direction is clear. By preparing today, libraries and information science professionals will be ready to lead tomorrow.

References:

1. Atkins, S. E. (1988). Subject trends in library and information science research, 1975-1984.
2. Ghanadi Nezhad, F., Osareh, F., & Ghane, M. R. (2022). Forecasting the subject trend of international library and information science research by 2030 using the deep learning approach. *International Journal of Information Science and Management (IJISM)*, *20*(1).
3. Mukred, M., Yusof, Z. M., Alotaibi, F. M., Asma'Mokhtar, U., & Fauzi, F. (2019). The key factors in adopting an electronic records management system (ERMS) in the educational sector: a UTAUT-based framework. *IEEE Access*, *7*, 35963-35980.
4. Panda, S., & Chakravarty, R. (2022). Adapting intelligent information services in libraries: A case of smart AI chatbots. *Library Hi Tech News*, *39*(1), 12-15.
5. Shahid, S. M. (2005). Use of RFID technology in libraries: A new approach to circulation, tracking, inventorying, and security of library materials. *Library Philosophy and practice*, *8*(1), 1-9.
6. Omosekejimi, A. F., & Eda, R. (2024). Strategies for managing born-digital record in university libraries: a study of federal university of petroleum resources effurun. *Journal of Digital Learning and Education*, *4*(1), 30-40.
7. Rao, S., & Sahu, S. C. (2024). The Influence of Artificial Intelligence on Library Services: Enhancing Access, Discovery, and User Engagement. *Academic Libraries*, 350.
8. Panda, S., & Chakravarty, R. (2022). Adapting intelligent information services in libraries: A case of smart AI chatbots. *Library Hi Tech News*, *39*(1), 12-15.

9. Tsay, J., Braz, A., Hirzel, M., Shinnar, A., & Mummert, T. (2022). Extracting enhanced artificial intelligence model metadata from software repositories. *Empirical Software Engineering*, *27*(7), 176.
10. G. Martín, A., Fernández-Isabel, A., Martín de Diego, I., & Beltrán, M. (2021). A survey for user behavior analysis based on machine learning techniques: current models and applications. *Applied Intelligence*, *51*(8), 6029-6055.
11. Gaitanou, P., Andreou, I., Sicilia, M. A., & Garoufallou, E. (2024). Linked data for libraries: Creating a global knowledge space, a systematic literature review. *Journal of Information Science*, *50*(1), 204-244.
12. Walsh, M., Rey, C. F., Ge, C., Nowak, T., & Tomkins, S. (2025, June). Algorithms in the Stacks: Investigating automated, for-profit diversity audits in public libraries. In *Proceedings of the 2025 ACM Conference on Fairness, Accountability, and Transparency* (pp. 2071-2086).
13. Campbell, C., Dér, Á., Geschuhn, K., & Valente, A. (2022). How are transformative agreements transforming libraries?
14. Gordon, A. S., Millman, D. S., Steiger, L., Adolph, K. E., & Gilmore, R. O. (2015). Researcher-library collaborations: Data repositories as a service for researchers. *Journal of librarianship and scholarly communication*, *3*(2).
15. Kolesnykova, T. O. (2019, December). The Role of Libraries as Publishers in the Open Education Landscape: Reflecting Modern World Practice of Open Textbooks. In *University Library at a new stage of social communications development. Conference proceedings* (No. 4, pp. 88-99).
16. Thomas, W. J., Chen, B., & Clement, G. (2015). ORCID identifiers: Planned and potential uses by associations, publishers, and librarians. *The Serials Librarian*, *68*(1-4), 332-341.
17. Meesad, P., & Mingkhwan, A. (2024). User experience and engagement in smart digital libraries. In *Libraries in Transformation: Navigating to AI-Powered Libraries* (pp. 273-326). Cham: Springer Nature Switzerland.
18. Ikwuanusi, U. F., Adepoju, P. A., & Odionu, C. S. (2023). Developing predictive analytics frameworks to optimize collection development in modern libraries. *International Journal of Scientific Research Updates*, *5*(2), 116-128.
19. Marzuki, M., Azero, S. F. Z., Zamzuri, N. A. A. M., Razilan, M., Kadir, A., & Campus, S. A. (2025). A Systematic Literature Review of User Behavior and Personalization in

Digital Libraries. *International Journal of Research and Innovation in Social Science*, *9*(1), 4830-4842.

20. Somerville, M. M., & Collins, L. (2008). Collaborative design: a learner-centered library planning approach. *The Electronic Library*, *26*(6), 803-820.
21. Schader, B. (Ed.). (2014). *Learning commons: Evolution and collaborative essentials*. Elsevier.
22. Burke, J. J. (2018). *Makerspaces: a practical guide for librarians* (Vol. 38). Bloomsbury Publishing PLC.
23. IFLA, H., & McKee, B. (2017). International Federation of Library Associations and Institutions. *ISBD, International Standard Bibliographic Description*, 173-204.
24. Chowdhury, G. G. (2016). How to improve the sustainability of digital libraries and information services?. *Journal of the Association for Information Science and Technology*, *67*(10), 2379-2391.
25. Hanson, E. D., Okorie, U. U., & Nsit, A. (2024). The roles of artificial intelligence in library automation: the prospects and challenges. *Erudite Compendiums in Education*, 13-23.
26. Bignoli, C., & Stara, L. (2020). *Responding to rapid change in libraries: a user experience approach*. American Library Association.

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THE ROLE OF PUBLIC LIBRARIES IN COMPETITIVE EXAM PREPARATION: A STUDY FROM KOLHAPUR DISTRICT, MAHARASHTRA

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Abstract:

Public libraries have long served as essential pillars of knowledge dissemination and social progress. In developing nations like India, these institutions play a transformative role in supporting students preparing for competitive examinations by providing access to academic resources and a conducive study environment. This study investigates the impact of public library resources on competitive exam preparation among students in Kolhapur District, Maharashtra. Employing a mixed-methods approach combining surveys and interviews, data were collected from 250 students and 15 librarians across 10 public libraries. Statistical analyses, including frequency distribution and chi-square tests, were used to examine library usage patterns and perceptions. Comparative insights from Sangli and Satara districts were integrated to contextualize findings. Results indicate that 78% of students rely on libraries for study materials and motivation, while digital resource usage remains below 20%. Key challenges identified include outdated collections, inadequate digital infrastructure, and insufficient government funding. The study concludes that public libraries in Kolhapur serve as vital academic enablers, yet modernization, ICT integration, and policy-level interventions are essential for sustaining their relevance in the digital era.

Keywords: Public Libraries, Competitive Examinations, Kolhapur District, Library Modernization, Digital Access, Student Learning, Maharashtra

1. Introduction

The public library has long been recognized as the "university of the people," a democratic institution offering equitable access to knowledge, culture, and information regardless of socio-economic status (IFLA, 2021). In the Indian context, where education functions as a primary vehicle for social mobility, libraries hold a pivotal role in fostering intellectual growth and promoting inclusive learning. Competitive examinations—such as those conducted by the Union Public Service Commission (UPSC), Maharashtra Public

Service Commission (MPSC), and recruitment agencies in the banking and defense sectors—represent critical pathways to employment and societal advancement. Aspirants preparing for these examinations require access to updated study materials, current affairs resources, reference books, and a conducive study environment. Public libraries often serve as these essential academic ecosystems, bridging gaps in resource accessibility and providing opportunities for self-directed learning (Kumar & Singh, 2020).

In Maharashtra, and particularly within Kolhapur District, public libraries have historically functioned as vital community learning hubs that support diverse groups of learners. Kolhapur, celebrated for its strong educational and cultural heritage, is home to numerous government and private libraries that collectively cater to thousands of readers and competitive exam aspirants. Libraries such as the Rajaram Library and Shivaji University's Jayasingrao Library have become academic landmarks within the district. However, the rapid expansion of online learning platforms, e-resources, and digital repositories has begun to redefine the traditional role of libraries. This technological shift has prompted a need for modernization—integrating digital infrastructure, Wi-Fi-enabled study zones, and online databases—without compromising the inclusive, communal essence of physical library spaces (Deshmukh, 2021).

The evolving educational landscape raises pertinent questions about the continued relevance and effectiveness of public libraries for contemporary students. Are libraries still perceived as indispensable for competitive exam preparation, or are digital alternatives replacing their centrality? How do factors such as accessibility, resource diversity, infrastructure, and librarian support influence students' preferences? These questions acquire special significance in semi-urban and rural settings like Kolhapur, where socio-economic disparities affect access to private coaching and online resources. Therefore, evaluating the impact of library services on students' preparation patterns provides valuable insights into how libraries contribute to equitable education and academic success.

The present study seeks to address these concerns by examining the role, utilization patterns, and perceived benefits of public libraries among competitive exam aspirants in Kolhapur District, with comparative observations from neighboring Sangli and Satara districts. By analyzing students' feedback on available resources, infrastructural adequacy, and digital readiness, the research highlights the enduring importance of public libraries as pillars of lifelong learning and social development. The findings underscore that, even in an

increasingly digital world, libraries remain essential democratic spaces for intellectual engagement, self-improvement, and preparation for competitive success—thus reaffirming their relevance in India's educational ecosystem.

2. Review of Literature

2.1 Libraries as Knowledge Enablers

Public libraries have transformed from static book repositories into vibrant centers of information exchange, lifelong learning, and community engagement. According to Khan and Bansode (2018), libraries in developing nations play a pivotal role in promoting social equity by bridging the educational divide between resource-rich and resource-poor learners. They provide affordable and inclusive access to knowledge that empowers marginalized communities and enhances educational opportunities. The study further emphasized that access to updated educational resources, reference materials, and a conducive study environment significantly improves students' academic performance and motivation. Thus, public libraries continue to function as essential instruments of social progress and intellectual empowerment in modern society.

2.2 Libraries and Competitive Examination Preparation

Kumar and Sharma (2019) observed that more than 65% of library users in Uttar Pradesh were competitive exam aspirants, using libraries primarily for reference materials and current affairs magazines. Similarly, Yadav (2022) found that libraries provided an invaluable motivational environment that enhanced discipline among aspirants. Patil and Jadhav (2019) reported that libraries in Maharashtra have adapted by creating specialized sections for competitive exams, including study guides, question banks, and exam notifications.

2.3 Digital Transformation and Challenges

Sawant (2020) highlighted that the digital revolution has forced libraries to reconsider their service models. Integrating ICT tools, e-books, and online practice tests can expand reach and engagement. However, rural libraries often lack the financial and technical resources for such upgrades. Deshmukh (2021) emphasized that funding shortfalls and low awareness impede the modernization of libraries in smaller districts.

2.4 Research Gaps

Although several studies have examined library usage in major cities, research on mid-sized districts like Kolhapur remains scarce. Moreover, few studies compare the situation across neighboring districts, making it difficult to assess regional disparities in

access, facilities, and impact. This study addresses these gaps through empirical data and comparative insights.

3. Objectives of the Study

The study aims to:

i. Examine the utilization of public library resources by students preparing for competitive exams in Kolhapur District.
ii. Assess the contribution of libraries to academic preparedness, motivation, and success.
iii. Compare library usage patterns and facilities between Kolhapur, Sangli, and Satara districts.
iv. Identify challenges faced by students and librarians in accessing and managing resources.
v. Propose policy recommendations for improving public library services in Maharashtra.

4. Research Methodology

4.1 Research Design

The study adopts a mixed-methods approach comprising quantitative surveys and qualitative interviews. This approach facilitates triangulation, enhancing the validity and reliability of results (Creswell, 2018).

4.2 Sampling

A stratified random sampling technique was employed to ensure representation across urban and rural areas. The sample consisted of 250 students and 15 librarians from 10 major public libraries in Kolhapur District, including the Central Library (Kolhapur City), Ichalkaranji Library, and Gadhinglaj Taluka Library. For comparative analysis, supplementary data from Sangli (n = 100) and Satara (n = 100) districts were also reviewed.

4.3 Data Collection Tools

- **Structured Questionnaires** (for students and librarians)
- **Interviews** (semi-structured, focusing on qualitative insights)
- **Observation Checklists** (for infrastructure and digital facilities)

4.4 Data Analysis

Quantitative data were analyzed using descriptive statistics (percentages, means) and inferential tests (chi-square) through SPSS 25. Qualitative data were coded thematically.

5. Questionnaire Framework

A. Student Questionnaire (Extract)

i. Frequency of library visits
ii. Purpose of visit (reading, borrowing, group study)
iii. Types of resources used
iv. Satisfaction with infrastructure and environment
v. Availability of digital materials and Wi-Fi
vi. Impact on exam preparation and motivation

B. Librarian Questionnaire (Extract)

i. Library's user composition (percentage of exam aspirants)
ii. Frequency of resource updates
iii. Availability of ICT and e-resources
iv. Funding sources and challenges
v. Perceived impact of library services

6. Results and Analysis

6.1 Demographics

Among the 250 student respondents surveyed from Kolhapur District, 60% were male and 40% were female, reflecting a moderate gender gap in library usage for exam preparation. A majority of the participants (68%) belonged to rural or semi-urban areas, highlighting the critical role of public libraries in bridging educational access beyond urban centers. Regarding educational qualifications, 72% of respondents were graduates, while 28% were pursuing or had completed postgraduate studies. In terms of exam focus, 45% of students were preparing for Maharashtra Public Service Commission (MPSC) examinations, 30% for banking sector tests, and 15% for police or defense recruitment exams.

6.2 Frequency of Library Use

Frequency of Visit	Respondents (%)
Daily	78
3–4 times a week	15
Occasionally	7

The data reveal a high level of engagement among students, confirming that public libraries continue to serve as essential spaces for disciplined study and academic focus. For most competitive exam aspirants, libraries remain integral to their daily routines, offering structure, motivation, and access to valuable learning resources.

6.3 Type of Resources Used

Resource Type	Regular Users (%)
Textbooks and reference books	85
Magazines and newspapers	70
Competitive exam guides	65
Online materials	18
Digital databases	10

These findings align with those of Yadav (2022), indicating that physical materials still dominate over digital resources in semi-urban Maharashtra. Similar trends were reported by Patil and Shinde (2021), who observed that limited digital literacy and infrastructural gaps restrict students' adoption of e-resources. Moreover, the cultural preference for printed materials and peer-based learning environments continues to reinforce library-centered study habits. Collectively, these insights highlight the enduring significance of traditional library ecosystems even amidst growing digitization efforts..

6.4 Satisfaction Levels

Aspect	Satisfied (%)	Dissatisfied (%)
Book collection	62	38
Study environment	80	20
Seating and space	55	45
Internet access	15	85
Guidance and support	40	60

6.5 Comparative Insights

When compared with Sangli and Satara, Kolhapur showed higher user engagement (78% daily users versus 65% in Sangli and 60% in Satara). However, Sangli had marginally better digital infrastructure, while Satara reported stronger local funding support through municipal grants.

6.6 Chi-Square Analysis

A chi-square test between "library visit frequency" and "exam performance improvement" yielded $\chi^2 = 8.42$, $p < 0.05$, indicating a significant association—students who frequently visited libraries performed better in mock tests and reported higher motivation levels.

6.7 Librarian Perspectives

Librarians reported that competitive exam aspirants make up 60–75% of library users. They highlighted challenges such as irregular funding, delayed book procurement, and lack of trained staff for digital resource management. One librarian from Ichalkaranji stated:

"Our students depend heavily on the library, but without proper funding, we cannot update materials regularly. Many still rely on old question banks."

6.8 Qualitative Observations

Students emphasized libraries' role as motivational environments. The silent, disciplined atmosphere promoted consistent study habits, which are crucial for long-term preparation. Peer interaction also fostered a sense of community learning.

7. Discussion

The findings affirm that public libraries continue to be indispensable for competitive examination aspirants in Kolhapur District. Despite the growing prominence of digital learning platforms, the physical and psychological benefits offered by libraries—such as disciplined study environments, structured routines, and equitable access to diverse resources—remain irreplaceable. These spaces not only facilitate focused learning but also nurture motivation and peer interaction, contributing significantly to students' academic persistence and performance.

However, the study also reveals limited adoption of digital tools and e-resources among users, reflecting infrastructural and financial constraints similar to those identified by Sawant (2020) and Deshmukh (2021). Comparative analysis suggests that while Kolhapur demonstrates commendable levels of user engagement and participation, Sangli District's stronger investment in information and communication technology (ICT) facilities and Satara's emphasis on locally funded modernization initiatives provide valuable models for improvement.

Importantly, libraries should not be viewed merely as repositories of books but as dynamic social ecosystems that foster collaboration, resilience, and intellectual curiosity—qualities essential for success in competitive examinations (Patil & Jadhav, 2019). Therefore, modernization strategies must strike a balance between digital transformation and the preservation of traditional community functions. Strengthening digital infrastructure, expanding access to online databases, and incorporating user-centric innovations can ensure that public libraries in Kolhapur and similar regions continue to

serve as inclusive, future-ready institutions that empower students to achieve academic and professional excellence.

8. Policy Implications and Recommendations

8.1 For Local Governments

- Establish a District Library Development Fund to update collections annually.
- Introduce Public Library Modernization Schemes with ICT integration and e-learning access.
- Encourage public-private partnerships (PPP) to sponsor infrastructure upgrades.

8.2 For Library Administrators

- Conduct monthly user feedback surveys to ensure responsiveness.
- Develop specialized sections for competitive exams with updated materials and digital question banks.
- Introduce Wi-Fi-enabled study zones and computer terminals.

8.3 For State and Central Policy

- Integrate public libraries into Maharashtra Knowledge Corporation (MKCL) frameworks.
- Launch digital literacy programs for librarians and users.
- Encourage collaboration between colleges and libraries for shared resources.

8.4 For Future Research

Further studies could include larger samples, longitudinal tracking of exam outcomes, and the impact of digital transformations post-implementation.

Conclusion:

This study concludes that public libraries in Kolhapur District significantly support students preparing for competitive examinations through access to educational resources, structured study environments, and motivational peer networks. However, infrastructural limitations, outdated collections, and lack of digital integration reduce their overall effectiveness.

Comparative insights suggest that Kolhapur's strong user base can be leveraged by adopting Sangli's digital initiatives and Satara's community funding strategies. Policymakers must recognize public libraries as integral to educational equity and youth empowerment. By investing in modernization, digital inclusion, and staff capacity-building, libraries can evolve into comprehensive learning ecosystems that prepare India's youth for future challenges.

References:

1. Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
2. Deshmukh, S. (2021). Public library challenges in rural Maharashtra: A case analysis. *Journal of Library and Information Management, 12*(3), 45–53.
3. IFLA. (2021). *Public Libraries and Sustainable Development Goals.* International Federation of Library Associations and Institutions.
4. Khan, R., & Bansode, S. (2018). The role of public libraries in promoting self-learning among rural youth. *Annals of Library and Information Studies, 65*(2), 89–97.
5. Kumar, R., & Sharma, M. (2019). Public libraries as learning hubs: A study of student engagement in Uttar Pradesh. *Library Progress International, 39*(1), 25–36.
6. Kumar, S., & Singh, P. (2020). Impact of libraries on competitive exam preparation: A user study. *Indian Journal of Information Science, 14*(4), 112–121.
7. Patil, V., & Jadhav, A. (2019). Library usage patterns among students in Maharashtra: An empirical study. *Research Review International Journal of Multidisciplinary, 4*(7), 65–70.
8. Sawant, M. (2020). The changing face of libraries: Digital transformation in Maharashtra's public libraries. *Library Philosophy and Practice, 2020*(1), 1–15.
9. Yadav, S. (2022). Information needs of competitive exam aspirants: A library-based study. *International Journal of Library and Information Science, 14*(3), 67–79.

समाजविकासात ग्रंथालयाची भूमिका आणि बहि:शाल योजना

पल्लवी डी. मुंढे

ग्रंथपाल विभाग,

मराठवाडा सांस्कृतिक मंडळाचे शारीरिक शिक्षण महाविद्यालय,

खडकेश्वर, छत्रपती संभाजीनगर, महाराष्ट्र

सारांश:

समाजाचा सामाजिक, आर्थिक, सांस्कृतिक विकास होणे महत्त्वाचे असते. समाजाचा सर्वांगीण विकास होण्यासाठी ग्रंथालय महत्त्वाची भूमिका बजावतात. ग्रंथालयातील वाचनीय साहित्य समाजापर्यंत पोहोचविण्यासाठी व वाचकांना ग्रंथालयाकडे आकर्षित करण्यासाठी विविध प्रकारचे उपक्रम ग्रंथालये राबवत असतात. यामुळे जनतेमध्ये वाचनाची आवड निर्माण होऊन ग्रंथालयाचा उपयोग वाढतो. ग्रंथालयातील वाचनसाहित्याचा परिचय होऊन वाचनामुळे जीवनमानावर सकारात्मक परिणाम घडून येतो. ग्रंथालयाकडे सर्व वर्गाचा वाचकवर्ग निर्माण होतो. ग्रंथालयाच्या बहि:शाल योजनेमधून अंतर्गत आणि बाह्य अशा दोन्ही सेवा देण्यात येतात. यामुळेदेखील सर्वच घटकापर्यंत पोहोचविता येते.

प्रस्तावना:

ग्रंथालयाचे विस्तारित कार्य म्हणजे समाजातील विविध घटकांपर्यंत वाचन साहित्य पुरविणे व लोकांना ग्रंथालयाकडे वळविण्यासाठी केलेले कार्य महत्त्वपूर्ण असते. वाचनाचे महत्त्व वाढवून समाजामध्ये साक्षरतेचे प्रमाण वाढविण्यासाठी या योजनेचा फायदा होतो. समाजाचा सामाजिक, आर्थिक, सांस्कृतिक व शैक्षणिक विकास घडवून आणण्यासाठी ग्रंथालयाची बहि:शाल योजना उपयोगी ठरते.

यामध्ये विविध उपक्रमांचा समावेश होतो. ग्रंथालयामधील उपलब्ध असलेले वाचन साहित्य समाजातील सर्व घटकांपर्यंत पोहोचले पाहिजे, वाचक ग्रंथालयापर्यंत यायला तयार झाले पाहिजेत. यासाठी केलेले सर्व प्रकारचे कार्य हे ग्रंथालयाच्या बहि:शाल योजनेमध्ये येते. या योजनेमुळे ग्रंथालय आणि समाज यांच्या मध्ये सकारात्मक आत्मीयता निर्माण होऊन ग्रंथालयातील वाचनसाहित्याचा पुरेपूर उपयोग केला जातो. समाजामध्ये सकारात्मक दृष्टिकोन निर्माण होऊन एक आदर्श नागरिक बनण्यासाठी या ग्रंथालयाच्या योजनेचा उपयोग होतो.

बहि:शाल योजनेचा अर्थ

मॅककॉलव्हीन: वाचकांची संख्या आणि ग्रंथालयाचे खंड वाढविण्यासाठी आणि नंतर ग्रंथालयाच्या अधिकाधिक लोकांना उपयुक्तता वाढविण्यासाठी ग्रंथालय विस्तारित सेवा दिली जाते.

हेरॉल्ड : बहि:शाल योजना म्हणजे ग्रंथालयाशी परिचित नसलेल्या अथवा सभासद नसलेल्या लोकांना ग्रंथालयाच्या कार्याची ओळख करून देण्यासाठी आखलेली योजना होय.

डॉ. एस. आर. रंगनाथन : वाचकांना ग्रंथ वाचण्यासाठी उत्स्फूर्तपणे सहभाग घेण्यासाठी बहि:शाल योजना राबविल्या जातात. डॉ. रंगनाथन यांच्या तत्त्वानुसार *"प्रत्येक ग्रंथाला वाचक मिळाला पाहिजे"* या सूचनेनुसार ग्रंथालयात संदर्भ सेवा, मुक्त प्रवेश सेवा, तालीका फलक, प्रदर्शन इत्यादी अनेक प्रकारे आपण वाचकांना विस्तारित सेवा दिल्या जातात.

परंतु जे वाचक ग्रंथालयापर्यंत येतच नाहीत, त्यांना ग्रंथालयाकडे येण्यासाठी व त्यांच्यामध्ये वाचनाची आवड निर्माण करण्यासाठी वेगवेगळ्या प्रकारची विस्तारित सेवा ग्रंथालयांना राबवावी लागते.

बहि:शाल योजनेचे उद्देश

- ग्रंथालयातील विविध प्रकारच्या कार्याची ओळख करून देणे.
- सामान्य जनतेमध्ये वाचनाविषयी आवड निर्माण करून ग्रंथालयाचा उपयोग वाढविणे.
- ग्रंथालयात असलेल्या वाचनसाहित्याचा परिचय करून देणे.
- जे अनियमित वाचक आहेत, त्यांना नियमित वाचक बनविणे.
- ग्रंथालयाला सामाजिक, सांस्कृतिक आणि बौद्धिक क्षेत्रात परावर्तित करणे.
- वाचनामुळे मानवी जीवनावर कसा परिणाम होतो याची ओळख करून देणे.
- ज्ञानाचा चारही दिशांनी प्रसार करण्यासाठी कार्य करणे.

बहि:शाल योजनेचे महत्त्व

- वाचकांमध्ये वाचनाविषयी आवड निर्माण करणे.
- निरक्षर लोकांना साक्षर बनविणे.
- लोकांमध्ये वाचनाविषयी जागृती निर्माण करणे.
- ग्रंथालय जे वाचनसाहित्य उपलब्ध आहे, त्याचा जास्तीत जास्त उपयोग करून घेणे.

बहि:शाल योजना – प्रकार

1. ग्रंथालयाचे माहितीपुस्तक तयार करणे

नवीन सभासदांना या माहितीपुस्तकाद्वारे ग्रंथालयातील विविध योजना व ग्रंथालयाची मूलभूत माहिती दिली जाते.

2. ग्रंथालय यंत्रणेची ओळख

ग्रंथालयातील वाचनसाहित्य कसे हाताळावे, ग्रंथालयीन सेवा, देवेघर पद्धत, तालीका फलक कसे हाताळावेत, संदर्भ ग्रंथ कसे पाहावेत, ग्रंथालयातील ग्रंथांची रचना इत्यादी संदर्भात संपूर्ण ग्रंथालयाची ओळख करून दिली जाते.

3. वेगवेगळ्या पद्धतीने पुस्तके प्रदर्शित करणे

ग्रंथालयात जे नवीन ग्रंथ आलेले असतात किंवा जे ग्रंथ अजूनपर्यंत हाताळले गेले नाहीत अशा ग्रंथांचे वेगवेगळ्या पद्धतीने व प्रदर्शनाद्वारे वाचकांना दिसतील अशा ठिकाणी दिग्दर्शन केले जाते.

4. व्याख्याने व परसंवाद आयोजित करणे

विशेष व्याख्याने व परसंवादाचे आयोजन केल्याने बरेचसे लोक ग्रंथालयात येत असतात. यामुळे ग्रंथालयाची ओळख होऊन ग्रंथालयाचा वापर करण्यास ते तयार होतात.

5. वाचन मंडळे

ग्रंथालयात वेगवेगळ्या प्रकारची वाचन मंडळे स्थापन केली जातात. यानिमित्ताने ही वाचकमंडळी ग्रंथालयात येऊन विविध विषयांवर चर्चा करतात व त्यासाठी ग्रंथालयातील ग्रंथांचा वापर केला जातो.

6. चित्रपट प्रात्यक्षिक

अमेरिकन ग्रंथालयामार्फत तेथील काही ग्रंथालयांचा परिचय करून देणाऱ्या चित्रपटांचे प्रात्यक्षिक दाखविले जाते. यामुळे ग्रंथालयाची प्रसिद्धी केली जाते.

7. सांस्कृतिक कार्यक्रमांचे आयोजन

ग्रंथालयात लोकहितकारी उत्सव आणि कार्यक्रम आयोजित केले जातात. यामध्ये नाटक, संगीत, दर्शन, व्याख्याने, गायन, भाषण स्पर्धा इत्यादी कार्यक्रमांचा समावेश असतो.

8. ग्रंथ प्रदर्शन

ग्रंथालयामार्फत वेळोवेळी ग्रंथ प्रदर्शनाचे आयोजन केले जाते. ठरावीक विषयावर आधारलेले ग्रंथ, नियतकालिके यांच्या प्रदर्शनातून वाचकांना आकर्षित केले जाते. ग्रंथ प्रदर्शनामुळे ग्रंथांची प्रसिद्धी होऊन वाचक वर्ग वाढतो. वाचकांमध्ये वाचनाची आवड निर्माण होण्यास ग्रंथ प्रदर्शन महत्त्वाचे ठरते.

9. मोबाईल सेवा

केंद्रीय किंवा शाखा ग्रंथालयामध्ये प्रवेश न मिळालेल्या नागरिकांना सेवा देण्यासाठी मोबाईल ग्रंथालयाच्या सेवांचा परिचय करून विविध ठिकाणी व्यासपीठ तयार केले जाते. ही सेवा राबविण्यासाठी प्रत्येक परिसरासाठी वेळ निश्चित करून अधिसूचित केले जाते.

10. ग्रंथालय बुलेटीन

ग्रंथालयाच्या बुलेटीनमध्ये केवळ नवीन पुस्तके आणि जर्नल्सच नव्हे, तर वर्तमान विषयांवर प्रकाशित होणारे काही महत्त्वाचे लेखन दिलेले असते. नवीन सामग्री व गरजेच्या गोष्टींबाबत थोडक्यात माहिती यामध्ये दिलेली असते. ग्रंथालय बुलेटीनमध्ये ग्रंथालयात मिळालेल्या नियतकालिकांची यादी किंवा अलीकडील प्रकाशनांची नोंद दिलेली असते.

11. घरपोच ग्रंथसेवा

बहि:शाल योजनेमार्फत वाचकांना सभासद बनवून हवे असलेले वाचन साहित्य घरपोच पुरविले जाते. यामुळे वाचकांमध्ये वाचनाची आवड निर्माण होऊन ग्रंथालयाचा हेतू साध्य होतो.

बहि:शाल योजना ही समाजातील सर्व घटकांसाठी ग्रंथालयामार्फत राबविलेली महत्त्वपूर्ण योजना असून या योजनेमुळे ग्रंथालयाचा विकास होण्यास मदत होते. तसेच समाजातील सर्व घटकांमध्ये सामाजिक सलोखा निर्माण होऊन देशासाठी आदर्श नागरिक निर्माण होण्यास हातभार लागतो.

ही योजना राबविताना अनेक अडचणी असल्या तरी, यावर ग्रंथालयाने मात करून आपला वाचकवर्ग वाढवणे, ग्रंथालयातील वाचन साहित्य वाचकापर्यंत कसे पोहोचेल व याचा जास्तीत जास्त उपयोग कसा होईल यासाठी सातत्यपूर्ण कार्य करणे गरजेचे आहे.

संदर्भ:

1. बवणकर हर्षदा (2010). ग्रंथालय संघटन, लोक प्रकाशन, पुणे.
2. ग्रंथालय आणि माहितीशास्त्र (2020). महाराष्ट्र राज्य पाठ्यपुस्तक निर्मिती व अभ्यासक्रम संशोधन मंडळ, पुणे.
3. सुतार धनंजय (2013). ग्रंथालय आणि माहितीशास्त्र, रेहा पब्लिकेशन, कोल्हापूर.
4. P. K. Panigrahi (2015). Public Library Services.
5. www.researchgate.net

महाराष्ट्रातील ग्रंथालय चळवळीचा इतिहास आणि थोर विचारवंतांचे योगदान: एक अभ्यास

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सारांश:

ग्रंथालयाचे अस्तित्व प्राचीन काळापासून असले, तरी ग्रंथालय–चळवळ मात्र आधुनिक काळातील आहे. ग्रंथालय हे सामाजिक जीवनाचा अविभाज्य घटक होय. त्या दृष्टीने व्यक्तीच्या जीवनात ग्रंथालयाला महत्त्वाचे स्थान असून ग्रंथालयसेवा मोफत मिळणे हा व्यक्तीचा हक्क व राष्ट्राची जबाबदारी होय. ग्रंथालयविषयक हा दृष्टिकोन इंग्लंड, अमेरिका यांसारख्या प्रगत राष्ट्रांत मान्य झाला व ग्रंथालय–चळवळीचे मूळ तेथे रुजले गेले. सार्वजनिक मोफत ग्रंथालये म्हणजे ह्या चळवळींचेंच मूर्त स्वरूप होय. सार्वजनिक ग्रंथालयांची स्थापना करणे, ग्रंथ, सेवक व वाचक या घटकांत सुसंवाद राखून ग्रंथालये समृद्ध करणे, त्यांना चिरस्थायी स्वरूप प्राप्त करून देणे इ. ग्रंथालय–चळवळींची उद्दिष्टे होत. त्या दृष्टीने व्यक्ती, ग्रंथालयसंघासारख्या खाजगी संस्था व शासकीय संस्था यांनी केलेल्या कार्याचा इतिहास म्हणजेच ग्रंथालय–चळवळीचा इतिहास होय.

प्रस्तावना:

भारतासोबत च महाराष्ट्र ग्रंथालय चळवळीचा इतिहास हा संपूर्णपणे सार्वजनिक ग्रंथालय चळवळीशी संबंधित आहे. ग्रंथालय चळवळ हे एक असे शास्त्र आहे की त्यामुळे अशिक्षितपणा आणि अज्ञान हे दूर करता येतात. ग्रंथालय चळवळीची अनेक कारणे आहेत जसे कागदाचा शोध, मुद्रण कलेचा शोध, साक्षरतेचा प्रसार, सामाजिक प्रेरणा, औद्योगिकरण, नागरीकरण आणि विज्ञान आणि तंत्रज्ञानातील प्रगती या कारणांबरोबरच ही चळवळ एक एक टप्पा पार करत पुढे जाते त्यात प्राचीन भारतीय ग्रंथालय चळवळ, ग्रंथालय अधिनियम, पंचवार्षिक योजना व ग्रंथालय, ग्रंथालय संघ, ग्रंथालयशास्त्र साहित्य, ग्रंथालय शास्त्र प्रशिक्षण, मुख्य ग्रंथालय व प्रलेखन केंद्र, प्रमुख आयोग व समित्या या पायन्यांच्या द्वारे आपणास ग्रंथालय चळवळ म्हणजे काय हे समजावून घेता येते.

महाराष्ट्रातील ग्रंथालये आणि ग्रंथालय चळवळ यांच्या इतिहासाचे स्थूलमानाने पुढील कालखंड करता येतील : (१) प्राचीन काल :(सुरुवातीपासून इ.स. १२०० अखेर) (२) मध्ययुगीन काल :(१२०१ ते १८०४) (३) अव्वल ब्रिटिश अंमलाचा काल : (१८०४ ते १९२१) (४) अर्वाचीन काल : (१९२१ ते १९६०) आणि (५) सद्यःकाल (१९६१ ते आजतागायत).

प्राचीन काल : १२०१ पूर्वी

भारतातील इतर प्रदेशांप्रमाणे महाराष्ट्रातही प्राचीन काळी संस्कृत ही ज्ञानभाषा होती. वेदादी वाङ्मय मुखनिविष्ट पद्धतीने जतन केले गेले व लेखनकलेचा शोध लागल्यानंतर भूर्जपत्रे, तालपत्रे यांवर हे ज्ञान ग्रथित होऊ

लागले. अशा ग्रंथांचा एक संग्रह प्रसिद्ध गणिती व ज्योतिषी आणि *सिद्धान्तशिरोमणी* व *करणकुतूहल* या ग्रंथांचा कर्ता भास्कराचार्य याने यादवकालामध्ये केला होता. जळगाव जिल्ह्यातील प्राचीन वसतिस्थान पाटण येथे देवगिरीच्या सिंघण राजा च्या (१२१० ते १२४६) कारकीर्दीतील उपलब्ध झालेल्या एका शिलालेखावरून असे दिसते, की पाटण येथील या ग्रंथालयाची देखभाल भास्कराचार्यांचा मुलगा लक्ष्मीधर व नातू चांगदेव हे दोघे करीत असत. त्या संग्रहात भूर्ज व तालपत्रावरील ग्रहगणित, ज्योतिष, वैद्यक यांच्या जोडीला *रामायण*, *महाभारत*, व्याकरण, पुराणे तसेच जैन-बौद्ध तत्त्वज्ञानाचे प्राचीन हस्तलिखित ग्रंथ होते आणि या ग्रंथांचा उपयोग करण्यासाठी भारतातील अन्य ठिकाणांहून भास्कराचार्यांचे शिष्य येत असत.

यादव घराण्यातील राजांच्या (नववे ते चौदावे शतक) कारकीर्दीत महाराष्ट्रात संस्कृत भाषेला राजाश्रय असून त्या काळात ग्रंथरचनाही खूप झाली. हेमाद्री हा त्या काळातील एक प्रमुख संस्कृत पंडित. त्याचा *चतुर्वर्गचिंतामणि* हा ग्रंथ एक बृहत्कोशच म्हणता येईल. त्यातील 'दानखंड' या प्रकरणात ग्रंथाचा महिमा गायिला असून 'सत्पात्र व्यक्तीला-ब्राह्मणाला-ग्रंथदान करावे', असा उल्लेख केलेला आहे. हेमाद्रीने संशोधिलेली मोडी लिपी ही एकोणिसाव्या शतकापर्यंत बखरवाङ्मय आणि व्यापारी रोजकीर्दीसाठी महाराष्ट्रात वापरली जात असे. या काळात राजेरजवाडे, शास्त्री-पंडित व पुराणिक यांच्याजवळ असलेली संस्कृत हस्तलिखिते एकोणिस-विसाव्या शतकांत पाश्चात्त्य आणि पौर्वात्य संशोधकांनी परिश्रमपूर्वक एकत्रित केली. त्यांतील असंख्य लिखिते पाश्चात्त्य देशांत नेली गेली, तर राहिलेली भांडारकर प्राच्यविद्या संशोधन मंदिर पुणे आनंदाश्रम संस्था, पुणे प्राज्ञपाठशाळा, वाई *भारत इतिहास संशोधक मंडळ*, पुणे डेक्कन कॉलेज, पुणे इ. संस्थांतून संग्रहित करण्यात आली आहेत.

मध्ययुगीन काल: १२०१ ते १८०४

या कालखांडा दरम्यान संस्कृत ही पंडितांची भाषा, ज्ञानभाषा होती पण महाराष्ट्रात सर्वसामान्यांची भाषा मराठी होती. या मराठी भाषेचा उगमकाल शके ९०५ (इ.स.९८३) पर्यंत मागे गेला असला तरी मराठीत ग्रंथरचना झाली ती बाराव्या शतकात. महानुभावीय पंडित म्हाइंभट्ट, मुकुंदराज, निवृत्ति-ज्ञानेश्वरादी भावंडे, नामदेवादी संतमंडळी यांचे अभंगवाङ्मय हे मराठीचे पहिले-वहिले वाङ्मय होय. मराठी भाषेचा सर्वश्रेष्ठ ग्रंथ *ज्ञानेश्वरी* हा १२९० मध्ये सिद्ध झाला. यानंतरच्या तेरा ते सतराव्या शतकापर्यंतच्याकाळात मराठी वाङ्मय संतकवी, पंडितकवी आणि तंतकवी यांनी समृद्ध केले. नाथ, वारकरी, दत्त, रामदासी व अन्यपंथीय संतांनी तसेच त्यांच्या अनुयायांनी, पंडितांनी, अभ्यासकांनी घरोघरी, देवालयांतून वा मठांतून या संतवाङ्मयाचा संग्रह केला व तो जतन केला. हे सर्व ग्रंथ हस्तलिखित स्वरूपात, कागदावर लिहिलेले असत व दोन्ही बाजूंना पुठ्ठे अथवा फळ्या लावून ते तांबडया फडक्यात बांधून ठेवले जात. समर्थ रामदास स्वामी यांचा ग्रंथालयांच्या संदर्भात स्वतंत्रपणेच उल्लेख केला पाहिजे. त्यांनी जसे परमार्थकारण, राजकारण केले, तसेच 'ग्रंथ'कारणही केले. त्यांच्या ग्रंथकारणात ग्रंथनिर्मिती, ग्रंथाध्ययन, ग्रंथसंरक्षण आणि ग्रंथप्रसार या चतुर्विध कार्यांचा समावेश होतो. त्यांनी स्थापन केलेल्या चाफळ, बीड, तंजावर, तिसगाव, डोमगाव इ. ठिकाणच्या मठातून उपलब्ध झालेल्या हस्तलिखित ग्रंथांची माहिती समर्थभक्त शं. श्री. देव यांनी *रामदासी संशोधन* या ग्रंथात दिली असून शके १७४० च्या सुमारास उपलब्ध असलेले जवळजवळ सर्व ग्रंथकारांचे ग्रंथ त्यात आहेत, असे दिसते.

हे सर्व ग्रंथ सत्कार्योत्तेजक सभा, धुळे येथे एकत्रित ठेवण्यात आले आहेत. ग्रंथांचा संग्रह, जतन व प्रसार या ग्रंथालयाच्या आधुनिक कल्पनेस अनुसरून समर्थ रामदास स्वामी हे महाराष्ट्राचे पहिलेग्रंथपाल ठरतात.

अठराव्या शतकात छत्रपती शाहू महाराज (१६८२ ते १७४९) यांनी बाळगलेल्या पुस्तकशाळेचा व त्यावर अधिकारी म्हणून नेमलेल्या गोविंदपंत आपटे या अधिकाऱ्याचा या काळातील ग्रंथालयांच्या संदर्भात उल्लेख करण्यासारखा आहे. १७६० च्या सुमारास रघुनाथराव पेशवे यांनी त्र्यंबकेश्वर व आनंदवल्ली येथे ग्रंथसंग्रह केले होते एवढेच नव्हे तर आस्था बाळगून अन्य ठिकाणांहूनही ग्रंथांच्या प्रती तयार करवून आणविल्या होत्या. पुण्यातील शनिवारवाड्यात पेशव्यांची पुस्तकशाळा होती व तीत रामायण, महाभारत, पुराणे, भक्तिविजय, ज्ञानेश्वरी, गुरुचरित्र, दासबोध इ. पोथ्या होत्या, असे उल्लेख आढळतात. तसेच पेशव्यांच्या दप्तरखान्यातही सरकारी कागदपत्रे जतन केले जात असत.

अव्वल ब्रिटिश अंमलाचा काल : (१८०४ ते १९२१).

एकोणिसाव्या शतकात इंग्रजी शिक्षणाबरोबर पाश्चात्त्य विचार व संस्कृती यांचा प्रसार होऊन या साहचर्यातून ग्रंथ, ग्रंथालये व वाचक यांच्या अभ्युदयासाठी विचार सुरू झाला तर १८०४ या वर्षी महाराष्ट्रात ग्रंथालयाचा प्रारंभ झाला. ईस्ट इंडिया कंपनीचे सरन्यायाधीश जेम्स मॅकिंटॉश यांच्या प्रयत्नाने मुंबईत 'लिटररी सोसायटी' स्थापन झाली व एका खाजगी डॉक्टरकडून ग्रंथसंग्रह खरेदी करून २५ फेब्रुवारी १८०५ रोजी त्यांनी ग्रंथालयाची स्थापना केली. १८२९ मध्ये हे ग्रंथालय इंग्लंडमधील रॉयल एशियाटिक सोसायटीची मुंबईची शाखा म्हणून मानले जाऊ लागले. १८३० मध्ये या ग्रंथालयाचे स्थलांतर टाउन हॉलमध्ये झाले. १८२० ते १८३० या काळात ब्रिटिशांनी जी लष्करी ठाणी वसवली होती, अशा मुंबई (१८१८), पुणे (१८२३), रत्नागिरी (१८२८) व सोलापूर (१८२९) इ. ठिकाणी 'बुक-क्लब' अथवा 'बुक सोसायटी' स्थापन करून ग्रंथालये सुरू करण्यात आली. त्यांना 'स्टेशन लायब्ररीज' असे संबोधीत. केवळ यूरोपियनांसाठीच त्या खुल्या असत. त्यानंतर पाश्चात्त्य ज्ञानाची गोडी महाराष्ट्रातील नवशिक्षितांना लागावी, या हेतूने १९३१ ते १८५५ या काळात 'नेटिव्ह जनरल लायब्ररीज' या नावाने जिल्ह्याच्या प्रमुख ठिकाणी कंपनी सरकारने ग्रंथालये स्थापन केली ती अशी : अहमदनगर (१८३८), पुणे१८४८, रत्नागिरी (१८५०), कोल्हापूर (१८५०), ठाणे (१८५१), सातारा (१८५२), नासिक (१८५३), सोलापूर (१८५३) व धुळे (१८५४). या ग्रंथालयांना उत्तेजन मिळावे म्हणून शासनाने १८५८ पासून ग्रंथ-देणग्या देण्यास प्रारंभ केला. त्यात प्रामुख्याने इंग्रजी ग्रंथ असत. शिक्षणाचा प्रसार झाल्यानंतर मातृभाषेतील ग्रंथांची उणीव जाणवू लागली. लोकमान्य टिळकांनी स्वातंत्र्य चळवळीला प्रारंभ करताना 'स्वभाषेचा' पुरस्कार केला होता. शासनानेही मातृभाषेत ग्रंथ लिहिण्यास प्रोत्साहन दिले. लोकमान्य टिळक, लोकहितवादी, म.गो. रानडे व वि.ल. भावे यांच्या प्रयत्नातून केवळ मराठी ग्रंथांचेच संग्रहालय स्थापन करण्याची कल्पना पुढे आली व ठाणे येथे १८९३ साली पहिले मराठी ग्रंथसंग्रहालय स्थापन झाले. या ग्रंथालयाच्या अनुकरणाने मुंबई मराठी ग्रंथसंग्रहालय (१८९८) व पुणे मराठी ग्रंथसंग्रहालय (१९११) या दोन ग्रंथालयांची स्थापना झाली. या मराठी ग्रंथसंग्रहालयांनी सार्वजनिक ग्रंथालयांच्या उदयाला चालना दिली. जुन्या 'नेटिव्ह जनरल लायब्ररीज' या संस्थांनीही आपले स्वरूप बदलवून ग्रंथालयातून मराठी भाषेतील ग्रंथांचा संग्रह करण्यास प्रारंभ केला.

ही ग्रंथालये वाचकांकडून मिळणारी वर्गणी व देणगी यांच्या उत्पन्नावर चालत असत त्यामुळे त्यांचे स्वरूप सार्वजनिक असले तरी खऱ्या अर्थाने ती 'सार्वजनिक' नसून वर्गणी ग्रंथायलयेच राहिली. आज अशी सु. पन्नास-साठ ग्रंथालये महाराष्ट्रात असून त्यांनी शताब्दी ओलांडलेली आहे. याच काळात 'भाऊसाहेब बिवलकर मोफत वाचनालय' आणि 'गणेश मोफत वाचनालय', तळेगाव (१९१९) पेटिट लायब्ररी, मुंबई (१८५९) पीपल्स फ्रिरीडिंग रूम अँड लायब्ररी, मुंबई (१८४५) यांसारखी मोफत वाचनालये स्थापन करून गरीब वाचकांची सोय सामाजिक कार्यकर्त्यांनी केली व एकप्रकारे सार्वजनिक ग्रंथालयसेवेचा पाया घातला.

अर्वाचीन काल : (१९२१ ते १९६०).

महाराष्ट्रात ग्रंथालय चळवळीला खऱ्या अर्थाने प्रारंभ झाला तो १९२१ मध्ये. याच वर्षी दत्तात्रय वामन जोशी यांच्या प्रयत्नाने मुंबईत व बॅरिस्टर *मुकुंद रामराव जयकर* आणि *न.चिं. केळकर* यांच्या नेतृत्वाने पुणे येथे मोफत वाचनालय परिषद भरली. त्यानंतर १९२६ व १९३९ मध्ये या संघाच्या आणखी काही परिषदा भरल्या. महाराष्ट्रातील पहिला महाराष्ट्रीय ग्रंथालय संघ हा १९२१ मध्ये स्थापन झाला. या संघाकडून फारसे भरीव असे कार्य झाले नाही, हे खरे असले तरी त्यानंतरच्या काळात या संघाच्या प्रेरणेने पुढील ग्रंथालय संघ स्थापन झाले व त्यांनी महाराष्ट्रातील ग्रंथालय चळवळ भरभराटीस आणली : (१) महाराष्ट्रीय वाचनालय संघ, मुंबई (१९२१) (२) मुंबई ग्रंथालय संघ, मुंबई (१९४४) (३) पुणेग्रंथालय संघ, पुणे (१९४५) (४) मराठी ग्रंथालय संघ, ठाणे (१९४५) (५) कुलाबा जिल्हा वाचनालय संघ, अलिबाग (१९४६) (६) महाराष्ट्र ग्रंथालय संघ, पुणे-मुंबई (१९४९) (७) विदर्भ ग्रंथालय संघ, नागपूर (१९५८) व (८) मराठवाडा ग्रंथालय संघ, औरंगाबाद (१९५९). यांपैकी मुंबई ग्रंथालय संघ, विदर्भ ग्रंथालय संघ व मराठवाडा ग्रंथालय संघ हे चार संघ १९६२ मध्ये महाराष्ट्र राज्य संघात समाविष्ट झाले.

ए.ए.ए. फैजी यांच्या अध्यक्षतेखाली १९३९ मध्ये स्थापन झालेली 'ग्रंथालय विकास समिती' ही या कालखंडांतील महत्त्वाची घटना होय. या समितीच्या योजनेनुसार मध्यवर्ती, प्रादेशिक, जिल्हा, तालुका व ग्राम या पातळ्यांवर एकूण २१,०७४ वाचनालये स्थापन होणार होती परंतु दुसऱ्या महायुद्धाच्या अनिश्चित वातावरणामुळे ही योजना स्थगित झाली व १९४६ मध्ये पुणे, अहमदाबाद, धारवाड येथे मध्यवर्ती ग्रंथालये, १६ जिल्हा ग्रंथालये आणि १९२ तालुका व पेटा ग्रंथालये सुरू झाली. त्यानंतर भाषिक प्रांतरचना व अन्य राजकीय घडामोडी यांमुळे पुढील टप्प्यांची कार्यवाही होऊ शकली नाही.

स्वातंत्र्यप्राप्तीनंतर स्वाभाविकच शिक्षण, संशोधन, विशेषतः वैज्ञानिक संशोधन, तांत्रिक ज्ञान व औद्योगिक प्रगती इत्यादींना प्राधान्य मिळाले. पंचवार्षिक योजनांद्वारा ग्रंथालयांना ग्रंथखरेदी व इमारती यांना वाढत्या प्रमा णावर अनुदान मिळू लागले. नवी विद्यापीठे, महाविद्यालये, संशोधन संस्था स्थापन झाल्या व त्यांची ग्रंथालये वाढू लागली.१९५२ मध्ये स्थापन झालेल्या विद्यापीठ अनुदान आयोगाकडून मिळणाऱ्या अनुदानातून विद्यापीठ, महाविद्यालयीन व संशोधन ग्रंथालयांचे ग्रंथसंग्रह वाढले. नव्या इमारती उभ्या राहिल्या त्यामुळे सार्वजनिक ग्रंथालयांची उणीव भासू लागली आणि त्यासाठी प्रयत्न सुरू झाले.

सद्यःकाल : (१९६१ ते आजतागायत).

१ मे १९६०रोजी महाराष्ट्र राज्याची स्थापना झाली. कारभाराच्या दृष्टीने मुंबई, पुणे, नागपूर व औरंगाबाद असे चार विभाग करण्यात आले. या चारही विभागांतील ग्रंथालय चळवळीचे एकसूत्रीकरण करण्याच्या दृष्टीने महाराष्ट्र राज्य ग्रंथालय संघ १९६२ मध्ये स्थापन झाला तर महाराष्ट्र, विदर्भ, मराठवाडा व मुंबई येथे स्वतंत्रपणेकार्य करणारे ग्रंथालय संघ एकत्र येऊन कार्य करू लागले. ग्रंथालय परिषदा, ग्रंथालय सप्ताह, प्रकाशने, प्रदर्शने यांद्वारा ग्रंथालय चळवळीचे पाऊल पुढे पडू लागले. १९६७ मध्ये महाराष्ट्र शासनाने केलेला सार्वजनिक ग्रंथालय कायदा ही या कालखंडातील सर्वांत महत्त्वाची घटना होय. ग्रंथालयांचे सरकारीकरण न करता स्थानिक उपक्रमशीलतेतून ग्रंथालय चळवळीचा विस्तार व विकास साधण्याचा प्रयत्न या कायद्याने केलेला आहे. प्रत्यक्ष कर न बसविता ५०० लोकवस्तीच्या खेडयांपर्यंत ग्रंथालय सेवा पोहोचविण्याची तरतूद या कायद्यात आहे. कायद्याच्या कार्यवाहीसाठी स्वतंत्र संचालनालय स्थापन झाले असून सल्ला देण्यासाठी राज्य ग्रंथालय परिषदेची स्थापना करण्यात आली. शिक्षण मंत्री आणि उपशिक्षण मंत्री हे या परिषदेचे पदसिद्ध अध्यक्ष व उपाध्यक्ष आहेत. शिक्षण सचिव, शिक्षण संचालक, धर्मादाय संचालक व ग्रंथालय संचालक तसेच विधानसभा, विधानपरिषद, नगरपालिका, महानगरपालिका, ग्रंथालय संघटना यांचे प्रतिनिधी हे या परिषदेचे सदस्य आहेत. या योजनेतून १९८२ अखेरपर्यंत एक मध्यवर्ती ग्रंथालय (रॉयल एशियाटिक सोसायटी, मुंबई), पुणे, नागपूर, औरंगाबाद, नासिक, रोड इ. ठिकाणी ११ शासकीय विभागीय ग्रंथालये, २७ जिल्हा ग्रंथालये, १९५ तालुकाग्रंथालये, ५०० ग्राम ग्रंथालये, संशोधन व इतर ग्रंथालये मिळून ३,००० सार्वजनिक ग्रंथालये महाराष्ट्रात प्रमुख शहरे, जिल्हे व तालुके या ठिकाणी स्थापन झाली असून त्यांच्यावर शासनाने १९८२-८३ मध्ये एकूण ८० लाख रु. खर्च केला आहे. याशिवाय १९८१ मध्ये महाराष्ट्र शासनाने मुंबई हस्तलिखित संग्रहालय स्थापन केले असून त्यात दुर्मिळ हस्तलिखिते एकत्र करण्यात येणार आहेत. तसेच १९७२ मध्ये राजा राममोहन रॉय प्रतिष्ठान स्थापन झाले आहे. या योजनेद्वारा प्रतिवर्षी स्थानिक सल्लागार समितीने निवडलेले सु. २ लाख रु. किंमतीचे उत्कृष्ट मराठी ग्रंथ महाराष्ट्रातील जिल्हा-तालुका वाचनालये आणि ग्रामग्रंथालये यांना देण्यात येतात त्यामुळे त्या त्या ग्रंथालयांतील ग्रंथांचा संग्रह समृद्ध होत असतो. १९८४ पर्यंत अशी सु. ४६ लाखांची मराठी पुस्तके या सार्वजनिक ग्रंथालयांना मिळालेली आहेत.

महाराष्ट्रातील सार्वजनिक ग्रंथालये, शैक्षणिक व संशोधन ग्रंथालये तसेच कृषी विद्यापीठ ग्रंथालये यांच्याद्वारा जनतेला मिळत असलेली ग्रंथालयसेवा तशी अद्यापिही अपुरीच आहे. लोकसंख्येचे वाढते प्रमाण, साक्षरतेचा झपाटयाने होणारा प्रसार व त्यामुळे वाढत्या प्रमाणावर ग्रंथांसाठी असलेली लोकांची मागणी, वाढत्या महागाईमुळे ग्रंथालयसेवेवरच अवलंबून राहण्याची जनतेची प्रवृत्ती आणि शासनाकडून ग्रंथालयांना मिळणारे अपुरे अनुदान या सर्व कारणांनी ग्रंथालय सेवेत अडचणी निर्माण झाल्या आहेत परंतु ग्रंथालय चळवळीतील कार्यकर्ते आणि लोकाभिमुख शासन यांच्या सहकार्याने या अडचणी दूर होतील व महाराष्ट्रातील जनतेला समाधानकारक ग्रंथालयसेवा उपलब्ध होईल, असा विश्वास बाळगावयास हरकत नाही.

विदर्भात ज्ञानप्रसाराच्या कार्याबरोबरच तत्कालीन स्वातंत्र्य चळवळीची व सामाजिक सुधारणेच्या चळवळींची माहिती जनतेपर्यंत पोहोचविणे आणि साहित्यविषयक चर्चा घडवून आणणे इ. उद्देशांनी ग्रंथालये स्थापन झाली. नारायणराव बाबूजी देशमुख यांनी आपल्या वडिलांच्या स्मरणार्थ जागा देऊन 'बाबूजी देशमुख वाचनालय', अकोला येथे १८६० मध्ये स्थापन केले तर १८६३ मध्ये नागपूरच्या महाल विभागात 'राष्ट्रीय ग्रंथालय' या नावाचे एक ग्रंथालय स्थापन झाले. तसेच अमरावती येथे 'अमरावती नगर वाचनालय' (१८६७) आणि नागपूर येथे सीताबर्डी किल्ल्याच्या पायथ्याशी 'सीताबर्डी नेटिव्ह क्लब' स्थापन झाला (१८६९). पुढे १८९५ साली 'राजाराम सीताराम दीक्षित वाचनालय' असे त्याचे रूपांतर करण्यात आले. त्याचप्रमाणे सार्वजनिक वाचनालय, भंडारा (१८६३), लोकमान्य वाचनालय, आर्वी (१८६५), सार्वजनिक वाचनालय, वर्धा (१८७०), नवयुग वाचनालय, आकोट (१८७६), दस्तूर रतनजी ग्रंथालय, खामगाव (१८९९), सार्वजनिक वाचनालय, हिंगणघाट (१८९५), राजे वाकाटक सार्वजनिक वाचनालय, वाशिम (१८९९) आणि सार्वजनिक वाचनालय, अचलपूर (१८९९) ही ग्रंथालये उदयास आली. अशा रीतीने १८९५ च्या सुमारास निदान २५-३० वाचनालये स्थापली गेली व त्यांतून चर्चात्मक बैठकी भरविणे व सभा-संमेलने घडविणे, यांसारखे उपक्रम सुरू करण्यात आले. या प्राथमिक स्वरूपाच्या वाङ्मयीन चळवळीतूनच विदर्भात अनेक खेडेगावी वाचनालयांचा विस्तार होत गेला.

मराठवाडा विभाग हा स्वातंत्र्यपूर्व काळात हैदराबाद संस्थानाचा भाग होता. तेथे खाजगी शिक्षण संस्थांद्वारे लोकजागृतीचा थोडाफार प्रयत्न झाला पण ग्रंथालयांच्या प्रसारावर फारसा भर दिला गेला नाही. १९२० पर्यंत औरंगाबादसारख्या मराठवाडयाच्या केंद्रस्थानी एकदेखील नाव घेण्याजोगे वाचनालय निघू शकले नाही. त्यानंतर मात्र 'बलवंत मोफत वाचनालय', औरंगाबाद, 'गणेश वाचनालय', परभणी, 'विचार विकास मंदिर', नांदेड व 'बलभीम वाचनालय', लातूर या वाचनालयांची स्थापना झाली. हैदराबाद संस्थानच्या १९५५ च्या ग्रंथालय कायद्यानुसार ग्रंथालय-स्थापनेची चळवळ खेडयापर्यंत पोहोचली होती.

नागपूर येथे १९४५ मध्ये राजाराम सीताराम दीक्षित वाचनालयाच्या सुवर्णमहोत्सव प्रसंगी भारतातील ग्रंथालय चळवळीचे प्रणेते डॉ. *रंगनाथन्* यांच्या मार्गदर्शनाखाली व न.चिं. केळकर यांच्या अध्यक्षतेखाली मध्य प्रदेश ग्रंथालय परिषद पार पडली. त्याच वर्षी सी.पी. अँड बेरार लायब्ररी असोसिएशनचीही स्थापना करण्यात आली. पुढे १९४९ मध्ये नागपूर येथे अखिल भारतीय ग्रंथालय परिषदेचे अधिवेशन भरले व विदर्भ विभागात ग्रंथालय चळवळ जोम धरू लागली. ग्रंथालय विधेयकाचा मसुदादेखील तयार करण्यात आला. तसेच १९५० मध्ये तत्कालीन मध्य प्रदेश सरकारने तयार केलेल्या प्रौढशिक्षण योजनांतर्गत ग्रंथालयांना उत्तेजन देण्यात आले त्यानुसार १९५५ मध्ये नागपूर येथे एक केंद्रीय ग्रंथालय व जिल्ह्याच्या ठिकाणी जिल्हा ग्रंथालये स्थापन करून त्यांच्याद्वारे खेडयापाड्यांतून ग्रंथवितरणाची सोय करण्यात आली.

विदर्भ विभागात अमराठी भाषिकांसाठीदेखील वाचनालये निघाली. यासंबंधांत उर्दू भाषेला वाहिलेली 'सदर मुस्लिम लायब्ररी', नागपूर (१९२२), बंगाली भाषिकांची 'सारस्वत सभा ग्रंथालय', नागपूर (१९१७) आणि 'भारत हिंदी पुस्तकालय', अमरावती (१९२९) यांचा प्रामुख्याने उल्लेख करावयास हवा.

राज्यपुनर्रचनेपूर्वी १९५५ मध्ये हैदराबाद संस्थानात 'हैदराबाद सार्वजनिक ग्रंथालय कायदा' अस्तित्वात आला व तो मराठवाडा विभागास लागू होता. जिल्ह्याच्या ठिकाणी 'स्थानिक ग्रंथालय प्राधिकार समिती' स्थापन करण्यात आली तर काही जिल्ह्यांतून ग्रंथालय करदेखील जमा करण्यात आला पण या कायद्याची अंमलबजावणी नीटपणे होऊ शकली नाही. १९६० नंतर सर्वच परिस्थिती बदलली व १९६७ मध्ये सर्व विभागांना महाराष्ट्र शासनाचा सार्वजनिक ग्रंथालय कायदा लागू झाला. या कायद्याची पुनर्रचना झाल्याखेरीज ग्रंथालय चळवळीचे पाऊल पुढे पडणार नाही, असे मत सध्या व्यक्त करण्यात येत आहे.

निष्कर्ष:

स्वातंत्र्यपूर्व काळात सार्वजनिक ग्रंथालयांच्या स्थापनेस सुरुवात झाली. परंतु भारतीय तसेच महाराष्ट्र ग्रंथालय चळवळीचे सिंहावलोकन केले असता शासनाने सार्वजनिक ग्रंथालये क्षेत्रास पोषक असे कार्य स्वातंत्र्योत्तर काळातच मोठया प्रमाणावर केल्याचे दिसून येते. देशासोबतच राज्यातील सार्वजनिक ग्रंथालय विकासाची दिशा खऱ्या अर्थाने बडोदा संस्थानाचे अधिपती श्रीमंत सयाजीराव गायकवाड यांनी आपल्या बडोदा संस्थानामधून दाखवून दिली. तसेच स्वातंत्र्यपूर्व काळातील पहिला सार्वजनिक ग्रंथालय कायदा कोल्हापूर संस्थानाने कोल्हापूर पब्लिक लायब्ररीज ॲक्ट १९४५ साली करुन या क्षेत्राला एक आदर्श घालून दिला होता. स्वातंत्र्योत्तर काळात देशातील मद्रास (१९४८). हैद्राबाद (१९५५) कायदा अस्तित्वात आला व या कायद्यान्वये राज्यातील ग्रंथालय चळवळीने चांगलेच बाळसे धरले. या चळवळीत अनेक विचारवंताची भूमिका महत्वाची मानली जाते. या नामावलीत समाजसुधारकांचा स्पस्ष्टपणे उल्लेख करावासा वाट्टतो जसे सयाजीराव गायकवाड, छत्रपती शाहू महाराज, डॉ. बाबासाहेबाब आंबेडकर, कर्मवीर भाऊराव पाटील, महात्मा फुले, पंजाबराव देशमुख, दत्तात्रय वामन जोशी,मुकुंद रामराव जयकर, न.चिं. केळकर,ए.ए.ए. फैजी, नारायणराव बाबूजी देशमुख, कृष्ण मुकुंद उजळंबकर आणि यांच्या सोबत अनेक विचारवंतांचे ग्रंथालय चळवळीमधे आपले अमूल्य योगदान आहे.

संदर्भ:

1. Government of India. (1967). *Cultural Forum: Libraries (Special Number).* Ministry of Education, New Delhi. (January–April).
2. Mahajan, S. G. (1984). *History of Public Library Movement in Maharashtra.* Pune: Shubhada-Saraswat Publications.
3. Bhatt, R. K. (1995). *History and Development of Libraries in India.* New Delhi: Mittal Publications.
4. Kumar, P. S. G. (2008). *Library Movement and Libraries Development in Maharashtra and Goa.* Delhi: B. R. Publication.
5. Government of Maharashtra, Higher and Technical Education Department, Directorate of Libraries, M. S. (n.d.). *Public library system in the state.* Retrieved from https://dol.maharashtra.gov.in/en/public library system in the state.

6. Wikipedia. (n.d.). *Maharashtra.* https://en.wikipedia.org/wiki/Maharashtra
7. Government of Maharashtra. (1967). *Maharashtra Public Libraries Act.* Higher and Technical Education Department, Mumbai.
8. उजळंबकर, कृ. मु. (1965). *ग्रंथालय कायद्याचे स्वरूप*. पुणे.
9. उजळंबकर, कृ. मु. (1965). *महाराष्ट्र राज्य ग्रंथालय मार्गदर्शिका* (खंड १–२). पुणे.
10. कानडे, रा. गो. (1938). *महाराष्ट्र राज्य प्राचीन-अर्वाचीन ग्रंथालये*. पुणे.
11. पाडोळे, ल. व. (1951). (संपा.). *मराठी ग्रंथालयांचा इतिहास*. नागपूर.
12. मराठे, ना. बा. (1979). *भारतीय ग्रंथालयाचा इतिहास*. मुंबई.
13. महाजन, शां. ग. (1965). *महाराष्ट्रातील ग्रंथालयांची सूची*. मुंबई.
14. जोशी, ल. (1999). *मराठी विश्वकोश* (खंड १२). महाराष्ट्र राज्य साहित्य व संस्कृती मंडळ, मुंबई.

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