

Web Content Analysis and Innovation Trends in NIT Libraries of India: Comparative Evaluation with a Heritage Case Study of Gurukul Kangri University Library Haridwar

By

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Abstract

This study investigates the web content, digital services, and innovations of National Institute of Technology (NIT) libraries in India, with a focus on identifying emerging trends, evaluating user-centric features, and assessing accessibility standards. The research employs a comprehensive web content analysis of all 32 NIT libraries, incorporating data from the National Institutional Ranking Framework (NIRF) 2024 and case studies to illustrate best practices. Special emphasis is given to the Gurukul Kangri (Deemed to be University) Central Library, known for its rich collection of rare manuscripts and Vedic literature. The findings highlight disparities in digital resource accessibility, technological adoption, and online user engagement across NIT libraries. Recommendations are proposed to strengthen library web portals as inclusive, innovative knowledge hubs.

Keywords: NIT Libraries, Web Content Analysis, Digital Services, NIRF Ranking 2024, Gurukul Kangri University, Academic Libraries, Library Innovation.

1. Introduction

Academic libraries serve as knowledge gateways, supporting teaching, research, and lifelong learning. In the digital era, library websites are essential tools for information dissemination, user engagement, and access to electronic resources. National Institutes of Technology (NITs) in India, as premier institutions, maintain dedicated library portals to serve diverse academic communities. The increasing reliance on digital platforms necessitates periodic evaluation of their design, content, and services to ensure optimal usability and alignment with institutional goals.

2. Literature Review

Web content analysis has emerged as a significant method for assessing library websites. Studies by Sonkar & Kumar (2020) and Singh (2022) emphasize the role of accessibility, navigability, and content richness in improving user experience. Internationally, Shiri & Rathi (2019) found that academic libraries adopting responsive design and multilingual support reported higher user satisfaction. In India, however, uniformity in service quality remains a challenge. Research by Sahu (2021) highlights that while some NIT libraries integrate advanced tools like discovery services, others lack basic OPAC accessibility.

3. Objectives

1. To assess the digital infrastructure, accessibility, and navigability of NIT library websites.
2. To evaluate the innovative services and resources offered.
3. To compare performance based on NIRF 2024 rankings.

4. To present a case study of Gurukul Kangri University Library as a model of traditional and modern knowledge integration.

4. Methodology

The study uses **Web Content Analysis (WCA)** covering:

- **Sample:** All 32 NIT libraries in India.
- **Parameters:** Website accessibility, OPAC availability, e-resources, user guides, mobile compatibility, social media integration.
- **Tools:** Manual evaluation and automated accessibility checks.
- **Timeframe:** April–July 2025.
- **Supplementary Data:** NIRF 2024 ranking data for top 10 NITs.

5. Results and Analysis

5.1 NIRF 2024 Ranking – Top 10 NITs

Rank	NIT Name	NIRF 2024 Score	Library Website Status
1	NIT Trichy	69.25	Fully functional, responsive, rich digital collections
2	NIT Surathkal	66.10	Integrated discovery services, e-journals
3	NIT Rourkela	65.75	Multilingual support, mobile app
4	NIT Warangal	65.05	AI chatbot, institutional repository
5	NIT Calicut	64.80	User guides, video tutorials
6	NIT Durgapur	63.15	OPAC and open access repository
7	NIT Silchar	62.50	Remote access to e-resources
8	NIT Kurukshetra	61.95	Limited mobile optimization
9	NIT Meghalaya	61.40	Basic but functional site
10	NIT Nagpur	60.95	Expanding e-resources



Figure 1: Screenshot of NIT Trichy Library homepage



Figure 2: Screenshot of NIT Trichy - Central Library has institute membership subscription to DELNET, New Delhi, and providing ILL (Inter-Library Loan) services to the users.

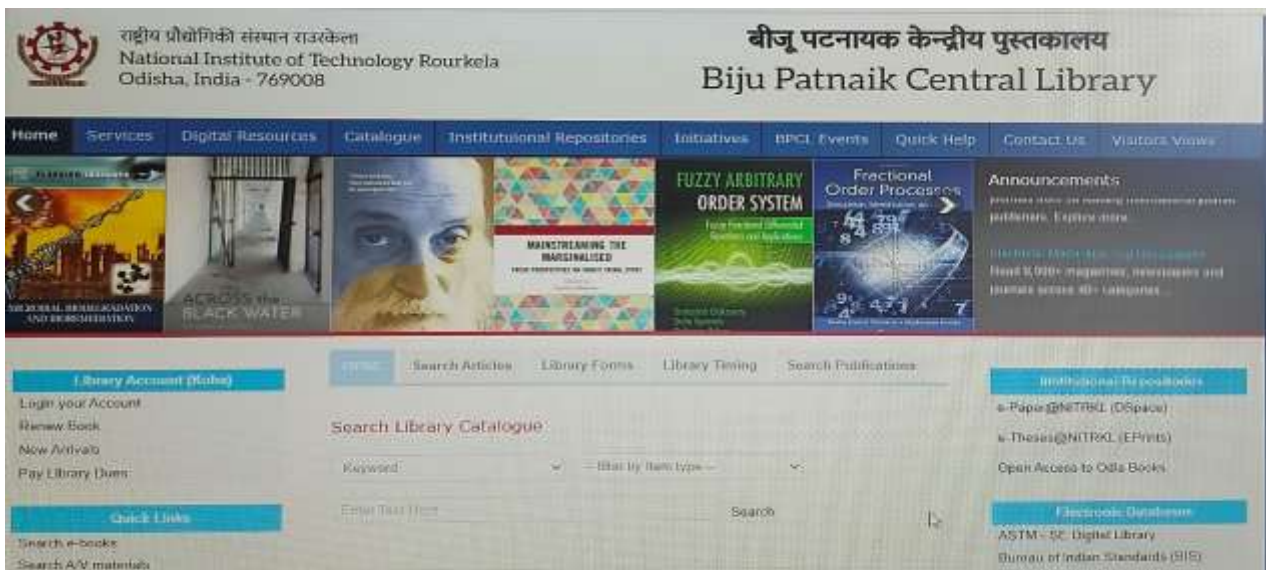


Figure 3: Screenshot of NIT Rourkela Library e-resources page

5.2 Key Trends Observed

- **Technological Adoption:** AI chatbots, federated search, and mobile apps in top-ranking NITs.
- **Digital Collections:** Most offer subscription-based databases like IEEE, Springer, Elsevier.
- **Gaps:** Some NITs lack updated content and proper mobile compatibility.

6. Case Study: Gurukul Kangri University Library

Founded in 1902 by Swami Shraddhanand Ji in Haridwar's Kangri village, the Gurukul Kangri University Library houses over **500 rare manuscripts**, including Vedas, Upanishads, and Arya Samaj literature. It also holds rare documents on Indian traditional knowledge systems. The library blends heritage preservation with modern technology, offering digitization facilities and OPAC services.



Figure 4: Photograph of Gurukul Kangri (Deemd to be University) Central Library



Figure 5: Photograph of Gurukul Kangri (Deemd to be University) Central Library main hall



Figure 6: Periodicals section showcasing Vedic and Arya samaj texts



Figure 7: Rare Manuscripts collection in central library reference section in GKV

Kanya Gurukul Library is a separate library of Gurukul Kangri Sam Vishwavidyalaya Haridwar which has 26000 books, and more than 2000 theses and dissertations and around 2000 girl's students and research scholars are studying there.



Figure 8: Science section and reading room in Knaya Gurukul Library Haridwar

7. Discussion

The analysis reveals that while some NIT libraries demonstrate global best practices, others struggle with outdated interfaces and poor mobile usability. Gurukul Kangri University serves as a reminder that libraries can bridge ancient wisdom and modern scholarship through digitization and web accessibility.

8. Recommendations

1. Standardize web content quality across NITs.
2. Introduce accessibility compliance (WCAG 2.1).
3. Enhance multilingual content to cater to diverse users.
4. Regularly update digital resources and guides.
5. Promote integration of heritage collections into digital platforms.

9. Conclusion

NIT libraries, as knowledge hubs, must continue evolving to meet 21st-century demands. Leveraging technology, ensuring equitable access, and preserving heritage are key to sustaining their relevance. The Gurukul Kangri University Library's model demonstrates that tradition and innovation can co-exist harmoniously in academic libraries.

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