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## **A Study of Information and Communication Technology Adoption in Academic Libraries of Uttar Pradesh, India**

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### **Abstract**

*This research article investigates the integration and utilization of Information and Communication Technology (ICT) within academic libraries in Uttar Pradesh (UP), India. The study recognizes the role of ICT in academic library, this study seeks to analyse the present state of ICT infrastructure, major applications, user involvement, challenges faced and future prospects. The study utilizes a descriptive methodology which is based on primary data collected by researcher and secondary data that includes recent studies based on examination of secondary data, government reports, and institutional surveys. There is a significant development in areas like automation digitalization of resource, especially in central universities and premier institutions. However, considerable differences continue, especially in colleges and universities in rural or semi-urban areas, disadvantaged by insufficient infrastructure, funding constraints, insufficient skilled manpower, and user skill gaps. The study concludes that ICT has transformed academic libraries outlook, appearance, realizing its full potential requires strategic investments, robust capacity building, enhanced collaboration, and services. It requires sustained policy support that aligns with national educational goals like the National Education Policy 2020.*

**Keywords:** *ICT, Academic Libraries, Uttar Pradesh, India, Library Automation, Digital Resources, Library Services, Challenges, Higher Education, Digital Divide.*

## **1. Introduction**

The introduction of ICT, or information and communication technology, fundamentally changed the landscape of academic libraries around the world. Libraries have gone from mere repository of physical collections to dynamic information hubs that provide smooth access to massive digital resources and innovative services (Singh and Sanaman, 2012). In India, this transition is critical for supporting the growing higher education sector and cultivating research excellence. Uttar Pradesh, is most populous state of India and with a dense network of educational establishments. The state faces distinct problems, such as resource gaps, infrastructure limits, and varying levels of institutional engagement, as well as considerable opportunities brought about by national digital efforts. The objective of this article is to offer a thorough examination of the utilization of ICT in academic libraries in Uttar Pradesh.

ICT research in Indian libraries reveals a gradual but consistent trend toward automation and digitization. Nationwide studies show that library uses library management software for management, the subscription of e-journal and database are on rise and institutional repositories are making its way in libraries. (Mahajan, 2014). The challenges such as limited finance, insufficient However, challenges such as limited budget, Internet facility, unskilled library professional, and lack of technological awareness in user. (Dangi, 2018) The academic institutions in Uttar Pradesh shows a disparity, few academic institutes are very advance in usage of ICT while few lack basic infrastructure. The central universities and important institutes in Uttar Pradesh have successfully implemented, digital library services and provide variety of e-services to users. (Khan and Bhat, 2012). In contrast, various studies on state universities and college often finds limited budgetary, limited internet connectivity limited, limited e resources, and acute shortage of trained library professional. (Arora, Jagdish, 2004). A recurrent theme in the state is the digital divide, which reflects the resource-rich-resource-poor and urban-rural divides.

## **3. Methodology**

This study employs a descriptive research design based primarily on the analysis primary and secondary data sources. This allows to compare and synthesize findings from different research conducted within Uttar Pradesh. A deep analysis Published research articles and conference papers focusing on ICT in libraries, specifically within UP or similar Indian states. The various reports and surveys by bodies like the University Grants Commission (UGC), INFLIBNET (Information and

Library Network Centre), National Assessment and Accreditation Council (NAAC), and the Government of Uttar Pradesh. Institutional publications, annual reports, and library websites of prominent UP universities and colleges.

#### **4. Results and Discussion**

The analysis focuses on identifying patterns, trends, common challenges, successful initiatives, and areas of disparity regarding ICT adoption and utilization.

##### **4.1. ICT Infrastructure:**

The foundation of ICT-enabled services rests on robust infrastructure. In Uttar Pradesh availability of hardware varies drastically. The Central universities and leading institutions possess modern computer labs, sufficient terminals for users and staff, servers, scanners, and multimedia equipment. However, many state universities and affiliated colleges suffer from obsolete computers, insufficient numbers, and lack of basic peripherals (Sharma & Mishra, 2018). Power backup is inconsistent outside major urban centres. Consistent networking and Internet connectivity with high bandwidth and stability is still a challenge, mostly in smaller towns and rural campuses. Leased lines are common in larger institutions, but reliance on slower broadband or even dial-up persists elsewhere. Wi-Fi coverage within libraries is expanding but is not yet uniformly reliable (Kumar & Varma, 2020). Initiatives like the National Knowledge Network (NKN) have benefited connected institutions.

##### **4.2. Core ICT Applications:**

- **Library Automation:** The central and various state universities have implemented SOUL of KOHA Software for library automation as per their need and vision. Their feature offers one step solution for the library automation. The circulation, serial control, acquisition and technical processing are done through automation software. The academic institute located in remote areas or standalone college lacks library automation and are mainly dependent on manual work for day-to-day activities of library.
- **Digital Resources:** The e-resources are need of time. It offers various advantages to the library as well as users. It allows multiple users to access the resource at a same time and from remote areas. The library subscribes e-resources and use free e-resource as per the need of institute. The INFLIBNET consortia is e-Shod Sindhu that is widely used in libraries. Universities also

subscribes for e-resource to meet UGC requirement for PhD scholars. Central universities and state universities also prefers to subscribe to subject specific database as per the requirement. Academic institution with skilled library professionals is focusing to develop institutional repository.

#### **4.3. User Experience and Benefits:**

Diverse user of library resources in institutions with good ICT infrastructure report significant benefits such as, enhanced access by providing 24/7 access to vast global knowledge resources beyond physical collections, and remote access through remote searching facilities, reservation, and access to e-resources save time. It supports research activities by providing access to current journals, databases, and citation tools accelerates research. The Learning Support benefits include availability of e-books, online tutorials, and multimedia aids diverse learning styles. However, it also causes frustration in users if library lacks proper modern infrastructure. The slow internet connectivity, insufficient management, lack of awareness about e-resources, and problem in accessing digital interface. Digital literacy among users remains a concern for both user and library professional.

#### **4.4. Major Challenges:**

The journey towards fully ICT-enabled libraries in UP is troubled with various known and unknown obstacles. The budgetary challenge includes untimely and uneven funding from the government. It doesn't allow library to upgrade its digital infrastructure or replace old equipment. The erratic power supply, poor internet connectivity, and shortage of modern hardware remains a challenge to library outside urban centre. There is lack of skilled library professionals with specialization in Information and Technology skills. The present library staff lacks opportunity for development. The library users lack the basic digital literacy skills to find required e-resource or to navigate e-platforms of library. The library struggle to conduct outreach programs to enhance user digital literacy. The traditional mindset of library professional is another factor that restricts the library automation. Technology is advancing day by day and continuous investment is a key to ensure library modernization and automation. Lack effective support to library to solve technical issue remains a core problem in implementing modern technologies in library.

#### **5. Conclusion**

ICT is transforming the academic library in Uttar Pradesh, making them as active facilitator in 21st century. INFLIBNET and UGC mandates have

made library to embrace digitalization in library. ICT has revolutionized the research and academic environment of institute. The academic institutions in urban areas have adopted ICT in their libraries while the adoption of ICT remains a challenge for remote and rural areas due to digital divide. The impact of ICT to transform the library as an active hub of learning has huge potential. However, it requires prolonged and sustained effort. The funding of academic institute with a target-based approach should be new approach, and progress should be monitored actively. The INFLIBNET, UGC and library association's role are vital in promoting digital literacy. The regular training of library professional is key for the successful implementation of ICT. Ensuring high speed internet connectivity and uninterrupted power supply across all the educational campuses is essential. The collaboration and sharing of expertise among libraries are crucial for timely and cost-effectiveness. Promotion of open-source software can reduce the costs of automation. Library outreach program such digital literacy and user awareness can increase use of e-services of library. The integration of ICT with library is not just an upgrade, but a fundamental exercise to support teaching, learning and research in modern era. Am strategic investment can make academic libraries vibrant, reachable and crucial source of knowledge for user.

## **6. References**

1. Sr., R. (2021). Information and Communication Technology and the Management of Schools in Nigeria. WestBow Press.
2. MHRD. (2020). National Education Policy 2020. Government of India. [https://www.education.gov.in/sites/upload\\_files/mhrd/files/NEP\\_Final\\_English\\_0.pdf](https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf)
3. INFLIBNET Centre. (2023). e-ShodhSindhu: Consortium for Higher Education Electronic Resources. <https://ess.inflibnet.ac.in/>
4. Khan, A. M., & Bhat, I. H. (2012). Use of Information Communication Technology in Academic Libraries of Northern India. *Trends in Information Management*, 8(1), 1-14.
5. Kumar, P., & Varma, M. K. (2020). Information and Communication Technology in College Libraries of Uttar Pradesh: A Study of Problems and Prospects. *International Journal of Information Dissemination and Technology*, 10(4), 191-195.
6. Babel, P. (2023). Information Communication Technology ICT Applications in the University Libraries of Uttar Pradesh\_An analysis. <http://hdl.handle.net/10603/496119>
7. Arora, Jagdish. Applications of new information technology in libraries and information centres. *Grantha: Indian Journal of Library Studies*, 1 (1), 6-96,2004 (also published in: *National Library Services: ICONLIS 2004: Papers of the International Conference on National Library Services (ICONLIS 2004)*, Kolkata, March 15-16, 2004 (ed. H.K. Kaul). Kolkata: National Library, p. 302-336, 2004

8. Varghese, N.V. and Garima Malik (2015): “Institutional Autonomy in Higher Education in India”, *University News*, 53(3)
9. SCECSAL, (26th: 2024: Mombasa, Kenya). (2024). Re-Imagining library and information services in the digital era [Conference-proceeding]. In T. Kwanya, I. M. Kibandi, & P. Gatiti (Eds.), *Proceedings of the 26th Standing Conference of Eastern, Central and Southern African Library and Information Associations (SCECSAL XXVI)*. Kenya Library Association. [https://www.scecsal.org/publications/papers2024/scecsal2024\\_proceedings.pdf](https://www.scecsal.org/publications/papers2024/scecsal2024_proceedings.pdf)
10. Chore, N. V. (2023). Use of information communication technology in academic library. *International Journal for Multidisciplinary Research*.
11. Dandge, D. U. & Godavari Institute of Management & Research. (2018). A study on Problems and Challenges of ICT in Library. In *Knowledge Librarian* (p. 271) [Journal-article]. <http://www.klibjlis.com>

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