



## Assessing user satisfaction and experience in academic libraries of higher education institutions in India: An empirical study

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### Abstract

User satisfaction and user experience are widely recognised as important indicators of the effectiveness of academic library services in higher education institutions. This study aims to assess user satisfaction and experience in academic libraries of higher education institutions in India. A quantitative research approach was adopted using a descriptive survey design. Data were collected from 170 respondents comprising students, teachers, faculty members, and library staff through a structured questionnaire. The results indicate that overall user satisfaction with academic library services is generally favourable. Higher levels of satisfaction are observed with print resources, circulation and reference services, and library staff behaviour. In contrast, moderate satisfaction is reported for electronic resources, digital services, and internet facilities, suggesting the need for infrastructural and technological improvements. Differences in satisfaction across user categories reflect varying expectations and patterns of library use. The study concludes that while academic libraries perform effectively in core service areas, strengthening digital infrastructure, expanding electronic resource access, and enhancing user education programmes are essential for improving overall user satisfaction and user experience in Indian academic libraries.

**Keywords:** Academic libraries, user satisfaction, user experience, higher education institutions, India

### Introduction

Academic libraries have long been recognised as the intellectual backbone of higher education institutions, supporting teaching, learning, and research activities. In the Indian higher education context, academic libraries are undergoing a significant transformation driven by rapid expansion of higher education institutions, increased student enrolment, digitalisation of resources, and evolving user expectations. From being largely collection-centred spaces, academic libraries in India are progressively redefining themselves as user-centric knowledge hubs that emphasise access, experience, engagement, and satisfaction.

User satisfaction has emerged as a critical indicator of library performance and service effectiveness. It reflects the extent to which library services, resources, infrastructure, and staff support align with users' academic and research needs. Closely linked to satisfaction is the concept of user experience, which encompasses users' perceptions, emotions, and interactions with both physical and digital library environments. In contemporary academic libraries, user experience goes beyond mere availability of information resources and includes dimensions such as ease of access, usability of digital platforms, responsiveness of library staff, comfort of physical spaces, and overall service quality.

In India, the higher education sector is characterised by diversity in institutional types, ranging from central and state universities to private universities and autonomous colleges. This diversity often results in uneven development of library infrastructure, services, and technological adoption. While some academic libraries have successfully integrated digital libraries, institutional repositories, and remote access services, others continue to struggle with issues related to resource adequacy, user awareness, and

service delivery. Consequently, understanding how users perceive and experience academic library services becomes essential for informed decision-making and strategic planning.

The COVID-19 pandemic further underscored the importance of user experience in academic libraries, as institutions were compelled to shift rapidly towards online and hybrid modes of service delivery. Users' reliance on electronic resources, virtual reference services, and remote access tools increased substantially, reshaping expectations from academic libraries. In the post-pandemic phase, evaluating user satisfaction and experience has become even more relevant, as libraries attempt to balance physical and digital services while ensuring inclusivity, accessibility, and service quality.

Many existing studies focus on isolated aspects such as electronic resource usage or service quality dimensions, often confined to single institutions or specific user groups. Comprehensive studies that integrate both satisfaction and experience across multiple dimensions of academic library services within Indian higher education institutions are still relatively scarce.

Against this backdrop, the present study seeks to evaluate user satisfaction and experience in Indian academic libraries by drawing evidence from higher education institutions in India. By examining users' perceptions of library resources, services, infrastructure, staff support, and digital facilities, the study aims to provide a holistic understanding of how academic libraries are performing from the users' perspective. The findings are expected to offer valuable insights for library professionals, administrators, and policymakers to enhance service quality, improve user experience, and strengthen the role of academic libraries in India's evolving higher education ecosystem.

## Literature Review

Academic libraries are widely regarded as a central component of higher education institutions, supporting teaching, learning, and research through structured access to information resources and services. User satisfaction has emerged as a crucial indicator for assessing the effectiveness and performance of academic library services, as it reflects users' perceptions of how well library offerings meet their academic and informational needs (Chand, 2020)<sup>[1]</sup>. Studies conducted in Indian college libraries reveal that undergraduate students primarily rely on library resources for examination preparation and general knowledge enhancement, indicating a utilitarian approach to library use (Das, 2020)<sup>[2]</sup>.

Research on ICT infrastructure in Indian college libraries indicates that although basic automation tools are widely adopted, gaps persist in Wi-Fi connectivity, bandwidth, and promotional activities for e-resources (Sen & Das, 2022)<sup>[12]</sup>. User satisfaction studies in research-intensive institutions reveal that while users appreciate traditional print collections and staff support, dissatisfaction is often associated with limited digital services and inadequate technological facilities (Roy & Mandal, 2021)<sup>[11]</sup>. Contemporary research highlights that library science students demonstrate digitally oriented information-seeking behaviour, with strong dependence on e-books, databases, and mobile access for academic tasks (Mane, 2023)<sup>[7]</sup>.

Recent studies show that library professionals generally possess positive attitudes towards ICT adoption, although skill gaps and infrastructural limitations hinder effective implementation of advanced technologies (Khanam & Sohail, 2024)<sup>[5]</sup>. Case studies from Indian colleges indicate that availability of core resources, conducive study spaces, and efficient borrowing services play a decisive role in determining users' satisfaction with library facilities (Mahalakshmi, 2024)<sup>[6]</sup>.

Research on college libraries in India demonstrates that while users are satisfied with textbooks and journals, dissatisfaction persists regarding access to technical standards, patents, and project reports (Gudi & Paradkar, 2018)<sup>[4]</sup>. Investigations into digital library usage confirm that system quality and user satisfaction jointly influence students' intention to continue using digital library platforms (Misra *et al.*, 2023)<sup>[8]</sup>.

Research on user education in Indian academic libraries highlights a gradual shift from orientation-based instruction to information literacy-driven learning support models (Nayana & Mohan, 2022)<sup>[10]</sup>. Studies on doctoral research behaviour reveal that inadequate access to scholarly journals and insufficient information literacy training negatively affect research motivation and satisfaction among PhD students (DuBroy, 2020)<sup>[3]</sup>.

Overall, the literature suggests that user satisfaction and experience in academic libraries are shaped by a combination of resource adequacy, service quality, and technological infrastructure. While traditional library services continue to receive favourable user perceptions, the growing reliance on digital resources necessitates continuous improvement in ICT facilities and user-centred service planning within higher education institutions.

## Research Objectives

- a. To assess the overall level of user satisfaction in academic libraries of higher education institutions in India.

- b. To examine users' experience with library resources, services, infrastructure, and digital facilities.
- c. To analyse the influence of library staff behaviour and support on user satisfaction and experience.
- d. To identify variations in satisfaction and experience among different user groups in academic libraries.
- e. To explore key challenges affecting effective use of academic library services.
- f. To suggest measures for enhancing user satisfaction and user experience in Indian academic libraries.

## Research Questions

- a. What is the overall level of user satisfaction with academic libraries in higher education institutions in India?
- b. How do users perceive their experience with library resources, services, infrastructure, and digital facilities?
- c. To what extent does library staff behaviour influence user satisfaction and overall library experience?
- d. Are there significant differences in user satisfaction and experience among different categories of users?
- e. What major challenges affect users' effective utilisation of academic library services?
- f. What strategies can be adopted to improve user satisfaction and enhance user experience in Indian academic libraries?

## Methodology

The study adopted a quantitative approach using a descriptive survey design to examine user satisfaction and experience in academic libraries of higher education institutions in India. Data were collected from 170 library users, including students, teachers, faculty members, and library staff, using a convenience sampling method. A structured questionnaire was employed as the data collection instrument, comprising demographic questions and five-point Likert-scale items related to library resources, services, infrastructure, digital facilities, staff behaviour, and overall satisfaction. The questionnaire was reviewed for clarity and relevance prior to administration.

The collected data were analysed using descriptive statistical techniques such as frequency, percentage, mean, and standard deviation. Mean scores were calculated to determine the average level of user satisfaction for each item using the formula:

$$\text{Mean } (\bar{x}) = \frac{\sum(f \times x)}{N}$$

Where (x) represents the Likert-scale value, (f) denotes the frequency of responses, and (N) is the total number of respondents.

Standard deviation was computed to measure the variability of users' responses around the mean using the following formula:

$$SD = \sqrt{\frac{\sum(x - \bar{x})^2}{N - 1}}$$

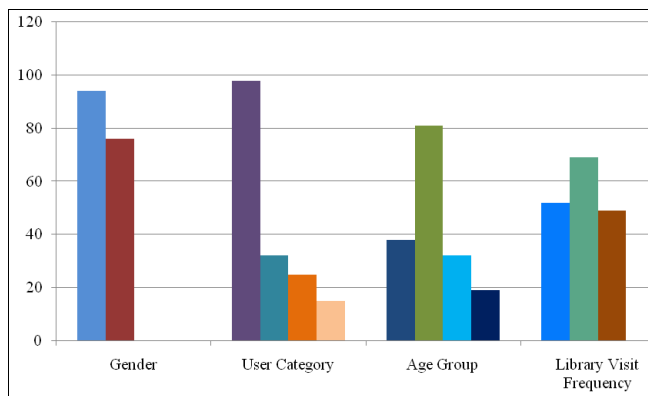
In addition, suitable inferential statistical tests were applied to examine variations in user satisfaction and experience among different user groups. Ethical considerations were strictly maintained throughout the study, with participation being voluntary and respondents' confidentiality duly ensured.

**Data Analysis and Interpretation**

The following section presents the analysis and interpretation of data collected from 170 respondents to examine user satisfaction and experience in academic libraries of higher education institutions in India.

**Table 1:** Demographic Profile of Respondents

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	94	55.3
	Female	76	44.7
User Category	Students	98	57.6
	Teachers	32	18.8
	Faculty	25	14.7
	Library Staff	15	8.9
Age Group (Years)	Below 20	38	22.4
	21-30	81	47.6
	31-40	32	18.8
	Above 40	19	11.2
Library Visit Frequency	Daily	52	30.6
	Weekly	69	40.6
	Occasionally	49	28.8



**Fig 1:** Demographic Profile of Respondents

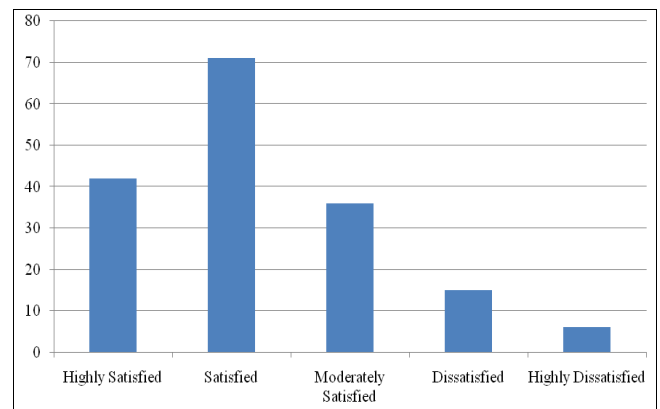
Figure 1 & Table 1 illustrates the demographic characteristics of the respondents (n = 170). Students constitute the largest user group, followed by teachers, faculty members, and library staff, reflecting the primary stakeholders of academic libraries in higher education institutions. The age distribution indicates a predominance of users in the 21-30 years category, while library visit frequency suggests regular engagement with library services. The diverse composition of respondents ensures a balanced assessment of user satisfaction and experience across different user categories.

**Table 2:** Overall User Satisfaction with Academic Library Services

Satisfaction Level	Frequency (n)	Percentage (%)
Highly Satisfied	42	24.7
Satisfied	71	41.8
Moderately Satisfied	36	21.2
Dissatisfied	15	8.8
Highly Dissatisfied	6	3.5
Total	170	100.0

Figure 2 & Table 2 presents the overall level of user satisfaction with academic library services. The results indicate that a majority of respondents are either satisfied or highly satisfied with the library services, accounting for

more than two-thirds of the total respondents. A smaller proportion of users reported dissatisfaction, suggesting that while academic libraries generally meet users' expectations, certain service areas require improvement. The distribution highlights an overall positive perception of academic library services among users, with scope for enhancing satisfaction levels through targeted service improvements.

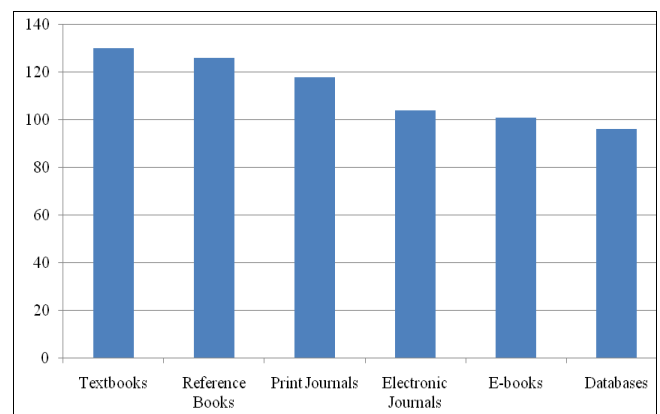


**Fig 2:** Overall User Satisfaction with Academic Library Services

**Table 3:** User Satisfaction with Library Resources

Library Resources	Frequency (n)	Mean	Standard Deviation
Textbooks	130	4.12	0.76
Reference Books	126	4.05	0.81
Print Journals	118	3.88	0.84
Electronic Journals	104	3.62	0.91
E-books	101	3.58	0.94
Databases	96	3.47	0.98

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Moderately Satisfied, 4 = Satisfied, 5 = Highly Satisfied



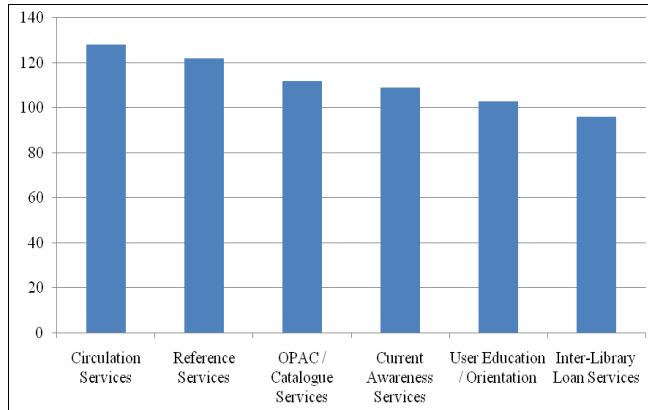
**Fig 3:** User Satisfaction with Library Resources

Figure 3 & Table 3 shows the mean scores of user satisfaction with different types of library resources. Higher mean values for textbooks and reference books indicate strong user satisfaction with print collections, reflecting their continued importance in academic activities. Print journals also received favourable ratings, although slightly lower than core book resources. Comparatively lower mean scores for electronic journals, e-books, and databases suggest moderate satisfaction, indicating issues related to accessibility, awareness, or usability of digital resources. The results highlight the need for strengthening electronic resource provision and user training to enhance overall satisfaction with digital collections.

**Table 4:** User Satisfaction with Library Services

Library Services	Frequency (n)	Mean	Standard Deviation
Circulation Services	128	4.08	0.74
Reference Services	122	3.96	0.82
OPAC / Catalogue Services	112	3.72	0.89
Current Awareness Services	109	3.61	0.91
User Education / Orientation	103	3.58	0.93
Inter-Library Loan Services	96	3.34	0.97

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Moderately Satisfied, 4 = Satisfied, 5 = Highly Satisfied



**Fig 4:** User Satisfaction with Library Services

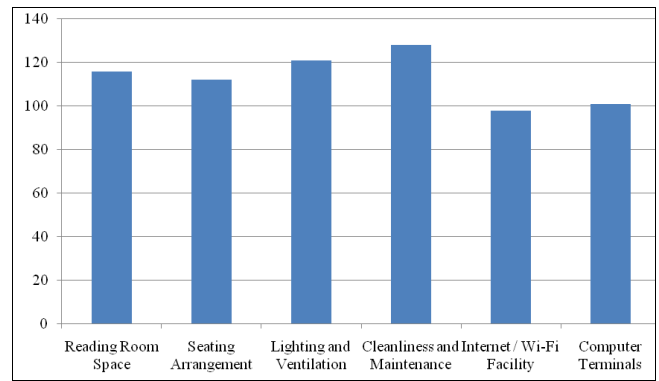
Figure 4 & Table 4 presents users' satisfaction with various library services. Circulation and reference services received the highest mean scores, indicating strong user approval of core service functions. OPAC and current awareness services show moderate satisfaction, suggesting acceptable performance with scope for further enhancement. Lower mean scores for user education programmes and inter-library loan services reflect limited awareness, accessibility, or utilisation of these services. The findings indicate the need for strengthening value-added and support services to improve overall user satisfaction.

**Table 5:** User Satisfaction with Library Infrastructure and Facilities

Infrastructure & Facilities	Frequency (n)	Mean	Standard Deviation
Reading Room Space	116	3.85	0.83
Seating Arrangement	112	3.78	0.86
Lighting and Ventilation	121	3.92	0.79
Cleanliness and Maintenance	128	4.01	0.75
Internet / Wi-Fi Facility	98	3.46	0.98
Computer Terminals	101	3.52	0.94

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Moderately Satisfied, 4 = Satisfied, 5 = Highly Satisfied

Figure 5 & Table 5 illustrates users' satisfaction with library infrastructure and facilities. Cleanliness and maintenance received the highest mean score, indicating positive user perceptions of the library environment. Reading room space, seating arrangements, and lighting conditions also show satisfactory mean values, reflecting a generally conducive study atmosphere. However, comparatively lower mean scores for internet connectivity and computer terminals suggest infrastructural constraints affecting digital access. These findings highlight the need for upgrading ICT-related facilities to enhance overall user experience.

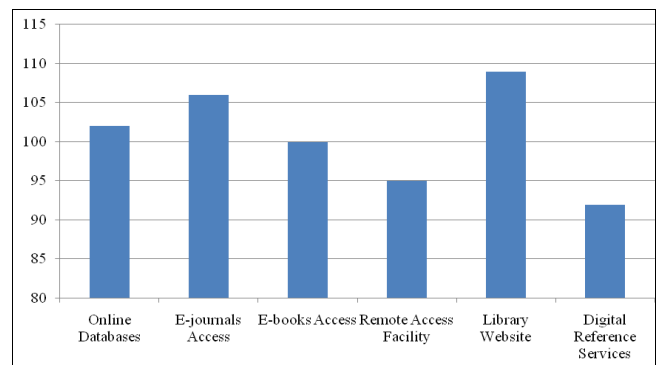


**Fig 5:** User Satisfaction with Library Infrastructure and Facilities

**Table 6:** User Satisfaction with Digital Library Services

Digital Services	Frequency (n)	Mean	Standard Deviation
Online Databases	102	3.58	0.92
E-journals Access	106	3.62	0.90
E-books Access	100	3.55	0.94
Remote Access Facility	95	3.41	0.99
Library Website	109	3.69	0.88
Digital Reference Services	92	3.36	1.02

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Moderately Satisfied, 4 = Satisfied, 5 = Highly Satisfied



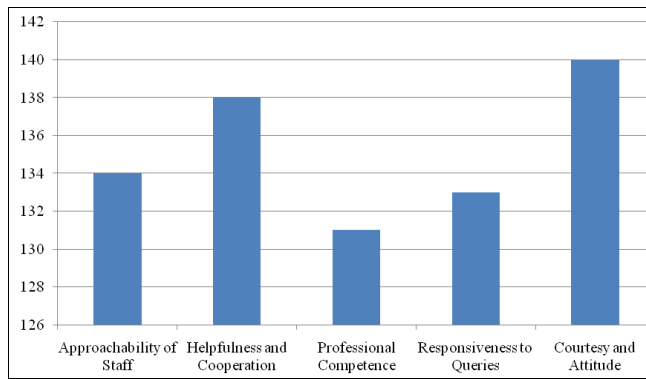
**Fig 6:** User Satisfaction with Digital Library Services

Figure 6 & Table 6 presents users' satisfaction with digital library services. The mean scores indicate moderate levels of satisfaction across most digital services. Access to e-journals and the library website received comparatively higher ratings, reflecting their regular use and perceived usefulness. Lower mean scores for remote access and digital reference services suggest challenges related to accessibility, awareness, or technical support. The findings emphasise the need to enhance digital infrastructure, improve usability, and strengthen user support mechanisms to increase satisfaction with digital services.

**Table 7:** User Satisfaction with Library Staff Behaviour

Staff Behaviour Attributes	Frequency (n)	Mean	Standard Deviation
Approachability of Staff	134	4.18	0.71
Helpfulness and Cooperation	138	4.22	0.69
Professional Competence	131	4.09	0.75
Responsiveness to Queries	133	4.14	0.73
Courtesy and Attitude	140	4.26	0.67

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Moderately Satisfied, 4 = Satisfied, 5 = Highly Satisfied



**Fig 7: User Satisfaction with Library Staff Behaviour**

Figure 7 & Table 7 highlights users' perceptions of library staff behaviour. All staff-related attributes received high mean scores, indicating strong user satisfaction with staff approachability, helpfulness, professional competence, and courteous behaviour. The relatively low standard deviation values suggest consistency in user responses. These findings underline the critical role of library staff in shaping positive user experiences and enhancing overall satisfaction with academic library services.

### Findings

The study reveals that overall user satisfaction with academic library services in higher education institutions is generally positive, with a majority of respondents expressing satisfaction or high satisfaction with the existing library system. Users demonstrate higher satisfaction with print-based resources, particularly textbooks and reference books, indicating their continued relevance in academic activities. Satisfaction with electronic resources such as e-journals, e-books, and databases is comparatively moderate. Core library services, including circulation and reference services, receive favourable responses from users, while services such as user education programmes and inter-library loan facilities show relatively lower satisfaction levels.

Findings related to library infrastructure indicate satisfactory perceptions of cleanliness, lighting, ventilation, and study environment, whereas internet connectivity and availability of computer terminals emerge as areas of concern. Digital library services receive moderate satisfaction ratings, with users expressing relatively better experiences with the library website and e-journal access compared to remote access facilities and digital reference services. Library staff behaviour is identified as a major strength, with high levels of user satisfaction reported for staff approachability, helpfulness, professional competence, responsiveness, and courteous attitude.

Variations in satisfaction and experience are observed among different user categories, suggesting differences in expectations and usage patterns across students, teachers, faculty members, and library staff. Overall, the findings indicate that while academic libraries perform well in delivering core services and maintaining positive staff-user interactions, improvements are required in digital infrastructure, advanced resources, and support services to enhance overall user satisfaction and experience.

### Limitations and Scope for Future Research

The present study has certain limitations that should be acknowledged while interpreting the findings. The study is

based on data collected from a limited sample of 170 respondents, which may restrict the generalisability of the results to all higher education institutions in India. The use of a convenience sampling method may also introduce respondent bias, as participation depended on accessibility and willingness of users. In addition, the study relies on self-reported perceptions of users, which may be influenced by individual expectations and subjective experiences at the time of data collection.

The scope of the study is confined to selected academic libraries and focuses primarily on user satisfaction and experience with resources, services, infrastructure, digital facilities, and staff behaviour. Other dimensions such as library management practices, budgetary constraints, and institutional policy factors were not examined in detail.

Future research may extend the scope by employing larger and more diverse samples across different regions and types of higher education institutions to enhance representativeness. Longitudinal studies could be conducted to examine changes in user satisfaction and experience over time. Further studies may also incorporate qualitative methods, such as interviews or focus group discussions, to gain deeper insights into users' expectations and experiences. Additionally, future research may explore emerging areas such as the impact of artificial intelligence, personalised digital services, and inclusive design on user satisfaction and experience in academic libraries.

### Conclusion

The present study examined user satisfaction and experience in academic libraries of higher education institutions in India and found that libraries generally perform well in delivering core services and supporting academic activities. Overall user satisfaction is positive, particularly with respect to print resources, circulation services, reference support, and library staff behaviour. These elements continue to form the backbone of effective academic library services and contribute significantly to favourable user perceptions. Despite these strengths, the study identifies several areas requiring improvement. Satisfaction with electronic resources, digital services, internet connectivity, and remote access facilities remains moderate, indicating infrastructural and technological constraints. Differences in satisfaction levels among students, teachers, faculty members, and staff further suggest that user expectations vary across groups and require differentiated service approaches.

Based on the findings, academic libraries should prioritise strengthening digital infrastructure by improving internet connectivity, expanding access to electronic resources, and enhancing remote access facilities. Greater emphasis should be placed on promoting user education and awareness programmes to maximise effective use of both print and digital resources. Libraries are also encouraged to enhance value-added services such as inter-library loan and digital reference services to support advanced academic and research needs. Continuous professional development of library staff should be sustained, as staff behaviour emerges as a key contributor to user satisfaction. Regular user feedback mechanisms may be adopted to monitor changing user needs and expectations. Overall, adopting a balanced strategy that integrates resource development, technological enhancement, and user-centred service planning will help academic libraries in India further improve user satisfaction and enrich overall user experience.

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