Users' Perspectives on The Impact of Information and Communication Technology (ICT) In Selected University Libraries in Telangana

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Abstract

The integration of Information and Communication Technology (ICT) in academic libraries has significantly transformed their structure and user engagement, making them dynamic digital ecosystems that provide real-time access to global information. This study, focused on selected university libraries in Telangana, surveyed 250 respondents—including students and faculty—using a structured questionnaire to assess the impact of ICT on accessibility, usability, service quality, and academic effectiveness. Key services evaluated included Online Public Access Catalogues (OPACs), e-journals, digital repositories, and automated circulation systems. The results indicated that ICT integration enhanced information accessibility and research productivity while reducing search time. However, challenges such as inconsistent internet connectivity, insufficient user training, and infrastructural disparities remain. The findings highlight that despite positive impacts on user satisfaction and academic performance, the potential of ICT is not fully realized due to gaps in awareness and technical support.

Keywords

ICT; Academic libraries: user perception: digital resources; OPAC; Telangana, library automation

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INTRODUCTION

The evolution of academic libraries from traditional print-based systems to digitally enabled knowledge centres represents one of the most significant transformations in higher education. Information and Communication Technology (ICT) has played a central role in this transition by enabling the automation of library functions, digitization of resources, and provision of remote access to scholarly information. In modern academic environments, ICT is not merely a supporting tool but a fundamental infrastructure that determines the efficiency, accessibility, and relevance of library services.

University libraries in Telangana, similar to those across India, have increasingly adopted ICT-driven systems such as integrated library management systems (ILMS), digital repositories, subscription-based e-journal platforms, and web-based OPAC interfaces. These technologies allow users to search, retrieve, and utilize information with unprecedented speed and convenience. For students and researchers, ICT-enabled libraries serve as critical enablers of academic success by providing access to updated, diverse, and high-quality information resources.

However, the effectiveness of ICT implementation is not solely determined by the availability of technology but also by how users perceive and utilize these services. User perception is influenced by multiple factors, including ease of use, accessibility, reliability, and perceived usefulness. If ICT systems are not user-friendly or adequately supported, their potential benefits may not be fully realized. Therefore, understanding users' perspectives is essential for evaluating the success of ICT integration in academic libraries.

This study aims to explore the impact of ICT on university library users in Telangana by examining their awareness, usage patterns, satisfaction levels, and challenges faced. By analyzing these dimensions, the research seeks to provide a comprehensive understanding of how ICT influences academic library services and user experiences.

LITERATURE REVIEW

The integration of ICT in academic libraries has been extensively examined in library and information science research. Scholars have consistently emphasized that ICT enhances the efficiency, accessibility, and quality of library services. The

adoption of digital technologies has enabled libraries to move beyond physical boundaries, offering users access to electronic resources such as e-books, e-journals, and online databases.

Studies on user perception indicate that ICT has significantly improved the user experience in academic libraries. Users appreciate the convenience of accessing information remotely, the speed of search and retrieval processes, and the availability of diverse digital resources. Research also shows that ICT-based services improve academic performance by enabling students and researchers to access up-to-date, relevant information.

Despite these advantages, several studies have identified challenges associated with ICT implementation. One of the most commonly reported issues is inadequate infrastructure, particularly in terms of internet connectivity and hardware availability. Slow network speeds and system downtimes can hinder access to digital resources, leading to user dissatisfaction. Additionally, a lack of training and digital literacy among users can limit the effective utilisation of ICT services.

Another important aspect discussed in the literature is the digital divide, which refers to disparities in access to and use of technology. In the context of university libraries, this divide may manifest as differences in ICT usage between students from different socio-economic backgrounds or academic disciplines. Addressing this issue requires targeted interventions such as user training programs and awareness campaigns.

Recent studies have also explored the role of user-centered design in improving ICT services in libraries. By incorporating user feedback into system design and service delivery, libraries can enhance usability and satisfaction. Overall, the literature suggests that while ICT has transformed academic libraries, its success depends on effective implementation, user engagement, and continuous improvement.

METHODOLOGY

This study employs a descriptive-analytical research design to examine users' perspectives on ICT in university libraries. A quantitative approach was employed to collect and analyze data systematically.

Sample and Data Collection

The study was conducted across selected university libraries in Telangana. A total of 250 respondents were selected using random sampling techniques to ensure representation from different user groups, including undergraduate students, postgraduate students, research scholars, and faculty members.
A structured questionnaire was developed to collect data on various aspects of ICT usage, including awareness, frequency of use, satisfaction levels, and challenges faced. The questionnaire consisted of multiple sections with Likert-scale items to capture user perceptions in detail.

Table 1: Demographic Profile of Respondents

Category	Sub-category	Frequency	Percentage (%)
Gender	Male	140	56
	Female	110	44
User Type	UG Students	90	36
	PG Students	70	28
	Research Scholars	50	20
	Faculty	40	16
Experience with ICT	<1 year	40	16
	1–3 years	100	40
	>3 years	110	44

The demographic profile of respondents indicates a diverse representation of user groups, ensuring balanced insights into ICT usage across different academic levels. The majority of respondents have more than one year of experience with ICT, suggesting familiarity with digital library systems and enabling reliable evaluation of user perceptions.

Data Analysis Techniques

The collected data were analyzed using statistical methods such as percentage analysis, mean score calculation, and comparative analysis. These methods enabled the identification of trends and patterns in user responses, providing a comprehensive understanding of the impact of ICT.

RESULTS

The analysis of collected data reveals significant insights into user perspectives on ICT in university libraries.

Table 2: Awareness and Frequency of ICT Usage

ICT Service	Awareness (%)	Frequent Usage (%)
OPAC	94	88
E-Journals	90	84
Digital Libraries	87	80
Institutional Repositories	72	65
Online Databases	89	82

The data indicate that awareness and usage levels are highest for OPAC and e-journals, reflecting their central role in academic activities. Institutional repositories show relatively lower usage, suggesting a need for increased awareness.

Table 3: ICT Usage Across Different User Groups

ICT Service	UG (%)	PG (%)	Research Scholars (%)	Faculty (%)
OPAC	85	92	96	98
E-Journals	70	88	95	97
Digital Libraries	78	85	90	92
Institutional Repositories	55	68	80	85
Online Databases	65	82	91	94

The data reveal significant variation in ICT usage across different user groups. Faculty members and research scholars use advanced digital resources such as e-journals and online databases more frequently, while undergraduate students rely more on basic services like OPAC. This indicates the need for targeted awareness and training programs to enhance ICT utilization among early-stage learners.

Table 4: User Satisfaction Analysis

Parameter	Mean Score (5-point scale)
Accessibility	4.3
Ease of Navigation	4.1
Resource Availability	4.2
System Speed	3.6
Technical Support	3.8

The results show that users are generally satisfied with ICT services, particularly in terms of accessibility and resource availability. However, system speed and technical support require improvement.

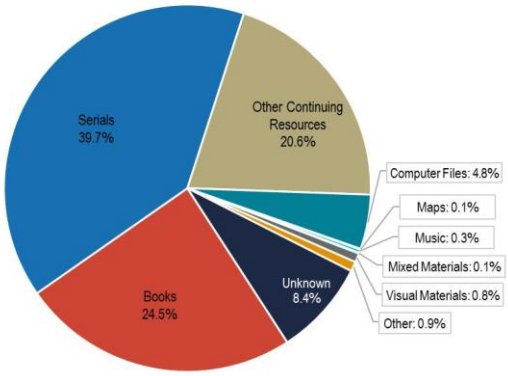

Fig. 1: ICT Usage Distribution Among User Groups

Table 5: Challenges Faced in Using ICT Services

Challenge	Agree (%)	Neutral (%)	Disagree (%)
Slow Internet Speed	68	20	12
Lack of Training	60	25	15
Limited Technical Support	55	30	15
System Downtime	50	28	22
Lack of Awareness	48	32	20

The findings highlight that slow internet speeds and a lack of training are the most significant barriers to ICT usage. These challenges directly impact user satisfaction and limit the effective utilisation of digital resources. Addressing these issues is critical for improving overall system performance and user experience.

DISCUSSION

The findings of this study provide a comprehensive understanding of how ICT influences user experiences in university libraries. The high levels of awareness and usage indicate that ICT has become an integral part of academic activities. Users benefit from improved access to information, faster retrieval processes, and a wider range of resources.

However, the study also reveals critical challenges that need to be addressed. Infrastructure limitations, particularly related to internet speed, significantly affect user satisfaction. Additionally, the lack of adequate training programs prevents users from fully utilizing advanced ICT services. These findings are consistent with previous research, which emphasizes the importance of infrastructure and user education in successful ICT implementation.

Another important observation is the variation in ICT usage among different user groups. Research scholars and faculty members tend to use more advanced digital resources, while undergraduate students rely on basic services. This suggests the need for targeted training programs to bridge the gap and promote the use of advanced ICT tools.

CONCLUSION

The study concludes that ICT has had a transformative impact on university libraries in Telangana, significantly improving accessibility, efficiency, and user satisfaction. However, challenges related to infrastructure, training, and awareness must be addressed to fully realise its potential.

To enhance ICT effectiveness, universities should focus on improving technological infrastructure, providing regular training programs, and promoting user awareness. By adopting a user-centred approach, academic libraries can ensure that ICT services meet users' evolving needs and contribute to academic excellence.

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