

User Satisfaction with Electronic Resources and Service: A Review of Literature

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Abstract: This study aims to investigate user satisfaction with electronic resources and library services in higher education institutions through systematic literature review (SLR). Following PRISMA guidelines, 45 articles were from 100 initial records from leading academic database such as Scopus, Web of Science, Science Direct, LISA and LISTA. The review explores service quality, user satisfaction, and the role of digital infrastructure across institutions in India, Ghana, Nigeria, and South Africa. The findings reveal moderate high user satisfaction in well-resourced institutions, while infrastructure limitations, digital illiteracy and lack of training hinder satisfaction in rural and underprivileged areas. Differences were also noted across disciplines, age groups and gender. Key factors influencing satisfaction include access to comprehensive digital collection, trained library staff, user awareness programs and reliable ICT infrastructure. The study emphasizes the need for inclusive strategies, continuous professional development, and improved digital access to enhance library effectiveness and academic success in the digital era.

Keywords: User satisfaction, Electronic Information Resources, ICT Applications in Libraries, Library Resources and Services, Digital literacy.

INTRODUCTION

In the digital era, academic libraries have transformed significantly to meet the developing informational needs of their users. With the proliferation of electronic resources and the integration of Information and Communication Technologies (ICT), libraries are no longer confined to physical spaces. They now serve as hybrid centers that provide access to both print and digital resources. User satisfaction with these resources and associated services has emerged as a crucial metric for evaluating library performance and guiding service enhancement strategies. University libraries, in particular, play a pivotal role in supporting teaching, learning, and research by offering seamless access to a variety of e-resources such as e-journals, databases, e-books, and institutional repositories. Numerous studies have investigated the extent to which library users—comprising students, faculty, and researchers—are aware of, access, and are satisfied with electronic information services. Factors such as ease of access, content relevance, interface usability, internet speed, infrastructure, and user training significantly influence satisfaction levels. While the shift to digital platforms has improved accessibility and efficiency, challenges persist in the form of limited ICT skills, inadequate orientation, and inconsistent connectivity. Evaluating user satisfaction not only helps in identifying gaps in service delivery but also assists in aligning library resources with user expectations and institutional objectives. This study aims to assess user satisfaction with electronic resources and services offered by university libraries. It explores key influencing factors such as infrastructure, awareness, availability, and user support, and provides recommendations to improve the overall library experience. A well-designed user satisfaction assessment can drive continuous improvement and enhance academic support.

E- Resources

Electronic resources (e-resources) are digital materials accessible electronically via computers and networked systems, including e-journals, e-books, online databases, multimedia content, digital archives, and institutional repositories. These resources are pivotal in reshaping the academic and research landscape, offering instant access to high-quality, peer-reviewed content and promoting interdisciplinary learning. The primary aim of e-resources is to enhance academic productivity by ensuring seamless access to up-to-date scholarly information irrespective of time and location, thereby bridging geographic and temporal barriers. Their integration into academic libraries has transformed how users engage with knowledge, supporting collaborative learning, personalized research, and innovative teaching methods.

E-resources offer several distinct advantages. They provide real-time access to vast volumes of information, reduce the dependency on physical holdings, and facilitate remote learning environments, which became particularly essential during global disruptions like the COVID-19 pandemic. Additionally, they support multimedia formats and interactive tools, fostering enhanced comprehension and engagement among users. From a cost perspective, e-resources optimize space and minimize recurrent maintenance compared to physical collections. The search ability, scalability, and easy integration with learning management systems further make e-resources indispensable in contemporary academic settings.

The future of e-resources is intrinsically linked to the digitalization of libraries. As academic institutions transition toward hybrid and digital learning models, libraries are evolving into fully integrated digital ecosystems. With the expansion of AI, cloud computing,

and mobile technology, e- resources will become more personalized, accessible, and intelligent—predicting user needs, curating content dynamically, and fostering data-driven decision-making. Digital libraries are not merely repositories but active learning environments capable of satisfying users' academic and research demands efficiently. They must, however, continually address challenges such as digital divide, licensing costs, copyright compliance, and user training. The future trajectory of e- resources lies in inclusive access, open-source cooperation, adaptive learning environments, and sustainability in digital archiving. For libraries to continue satisfying users, especially in specialized domains such as engineering, medicine, or architecture, it is imperative to align e-resource management with evolving technological landscapes, user behavior, and institutional goals. Ultimately, e-resources are not only a technological advancement but a transformative force in achieving reasonable, dynamic, and lifelong access to knowledge in the digital age.

LITERATURE REVIEW

The literature review of the present study is systematically structured across multiple dimensions to provide a comprehensive understanding of the key issues related to user satisfaction with library resources and services. It critically examines current research to identify patterns, gaps, and evolving trends in user behavior, digital resource utilization, and service quality in academic libraries. Emphasis is placed on how users perceive, access, and evaluate both traditional and electronic services, highlighting satisfaction levels and areas requiring improvement. This review serves as the foundation for the current research, enabling the formulation of relevant objectives and a user-centered investigative framework.

Masinde et al. (2025) examined the impact of library service quality, based on the SERVQUAL model, on student satisfaction at Greta University. The study revealed a strong positive correlation between high-quality library services and student satisfaction. While demographic variables like age and gender had minimal impact, students residing in university hostels reported greater satisfaction. Key influencing factors included the library's physical environment, resource accessibility, and service responsiveness. The findings stress the importance of maintaining user-centered, high-quality library services to foster positive academic experiences and higher user engagement.

Sumalinog, Redondo, and Tagarda (2025) conducted a descriptive-correlational study on student satisfaction with library services in a private university in Cagayan de Oro City. Using validated questionnaires, the study found that

students rated services highly, particularly appreciating the range of print and electronic resources, staff support, and comfortable facilities. Non-print material usage was lower, yet overall satisfaction remained high. A significant correlation was found between service quality and user satisfaction. The research emphasizes a user-centered service approach and effective resource promotion to improve academic support and increase user engagement.

Kushwaha and Singh (2024) Investigated undergraduate students' satisfaction with library resources at Babasaheb Bhimrao Ambedkar University. Data from 148 students indicated high satisfaction with core services like book lending and librarian assistance. Regular library use was reported, particularly for print materials. Electronic resources were positively received but challenged by poor internet, shelving issues, and limited collections. Recommendations included infrastructure upgrades, better connectivity, and awareness campaigns to improve access and satisfaction. The study highlights the need for responsive infrastructure and resource management in academic libraries.

Narasanna and Naik (2024) conducted a large-scale user satisfaction study at the University of Horticultural Sciences, Karnataka. Among 610 students surveyed, primary library use included reading, assignment preparation, and accessing digital content. While overall satisfaction was moderate to high, users identified gaps in services such as interlibrary loans, SDI, CD/DVD access, and reprographic services. Staff behavior and impartiality were also noted areas of concern. The study recommended targeted improvements to ensure consistency, expand access, and enhance service delivery to meet evolving academic needs.

Somashekhar and Bagalkoti (2024) explored the use of electronic resources among research scholars at the International Institute of Information Technology, Bangalore. The majority expressed satisfaction with access to e-resources, though issues such as limited journal availability, platform usability, and lack of research support tools were reported. Despite these concerns, the benefits of e- resources in supporting research outweighed the limitations. The study suggests improvements in digital infrastructure, improved platform design, and increased technical support to optimize the research environment for scholars.

Panhilason (2024) considered awareness, utilization, and satisfaction levels regarding online library services among students at Carlos Hilado Memorial State University. With a strong Cronbach's alpha (0.910), the study found high awareness and frequent use of digital resources, contributing to strong user satisfaction. Significant differences emerged based on demographic factors like age, year, and campus affiliation. A strong positive correlation between awareness and utilization was observed, underscoring the importance of

effective information dissemination to exploit the benefits of online library services and academic resource engagement.

Rasheed and Ahmed (2024) investigated the relationship between library professionals' self-efficacy in digital information seeking and user satisfaction in Pakistani academic libraries. The study found that physiological confidence had the strongest impact on user satisfaction, followed by personal experience and verbal influence. Vicarious experience had limited influence. The research highlights the significance of library staff confidence in delivering user-centric digital services. The authors suggest expanding the scope of future studies to include more diverse populations for broader generalizability and deeper insight into digital service delivery dynamics.

Agina-Obu and Oyinkepreye Evelyn (2023) assessed user satisfaction with information systems in Nigerian university libraries using a descriptive research design and data from 120 graduate students. Findings revealed limited usage and low engagement with library materials, reflecting dissatisfaction with the quality and relevance of resources. The study attributed low satisfaction to outdated content, poor service delivery, and unsatisfactory user support. Recommendations included updating library collections, improving service efficiency, and implementing user-centered policies. The study highlights critical shortcomings in current academic library practices and calls for strategic improvements to enhance the effectiveness and appeal of library information systems in Nigerian higher education institutions.

Khan et al. (2023) investigated the role of dynamic technologies and managerial support on user satisfaction and research productivity in academic libraries in Khyber Pakhtunkhwa, Pakistan. Using the Technology Acceptance Model (TAM) and structural equation modeling, the study found that advanced technologies and strong managerial involvement significantly enhance access, resource utilization, and academic performance. Users expressed high satisfaction, especially when systems were intuitive and leadership was positive. The research emphasized the need for robust digital infrastructure and effective user management. The TAM-based framework provided actionable insights for improving library service delivery and elevating user satisfaction in technology-integrated academic environments.

Alam and Mezbah-ul-Islam (2023) examined how various service factors affect user satisfaction in public university libraries across Bangladesh. Surveying 521 users, the study analyzed the impact of library resources, staff competence, staff behavior, physical facilities and responsiveness. Using Structural Equation Modeling, it found that all variables except responsiveness significantly

influenced satisfaction, with physical facilities having the greatest effect. Competent and considerate staff were also critical contributors. As the first SEM-based study on this topic in Bangladesh, it offers important guidance for improving academic library services by focusing on infrastructure, resource quality, and staff training to meet user expectations effectively.

Srikanth and Akki (2023) considered electronic resource usage, satisfaction, and challenges among students in selected Bangalore universities. With a high response rate from 259 participants, results showed high awareness and regular use of e-resources for academic support. Overall satisfaction was positive, especially regarding resource quality and access. However, users reported challenges including technical issues, inadequate training, and limited availability. The authors recommend improving infrastructure and offering user training programs to ensure better access and utilization. The study emphasises the importance of continual support and system upgrades to enhance e-resource usage and satisfaction among higher education students in India.

Gamage (2022) evaluated library usage and satisfaction among undergraduates at the Institute of Indigenous Medicine, University of Colombo. Data from 154 students showed 77.3% satisfaction, with positive perceptions of general services. However, major gaps were found in electronic resources, infrastructure, and user awareness. Students lacked adequate access to e-resources and modern facilities. The study recommends highlighting digital resource development, infrastructure enhancement, and implementing awareness programs. These improvements are essential to meet evolving academic demands and increase student engagement. The research highlights the need for a balanced approach that combines traditional services with modern digital capabilities in university libraries.

Rani and Kaur (2022) explored e-resource awareness, usage, and satisfaction among faculty and researchers at Maharshi Dayanand University during the COVID-19 pandemic. Findings indicated full awareness and widespread usage of e-resources, primarily for research. Most users preferred title-based searches and reported minimal retrieval issues. Overall satisfaction was high, though challenges related to navigation and skills were noted. Respondents recommended ongoing training and workshops to enhance usage proficiency. The study emphasizes the need for continual digital literacy initiatives to ensure sustained engagement and maximize the effectiveness of e-resources in supporting academic research and teaching during disruptive periods like the pandemic.

Temboje and Ga'anda (2022) evaluated user satisfaction with library services at the Federal University of Kashere, Nigeria, based on responses from 342 users. While students

were generally satisfied with print-based services like circulation and reference, dissatisfaction was evident in electronic services. Issues such as erratic power supply, limited awareness, and short library hours were significant barriers. Most users visited the library daily for academic purposes but underutilized digital resources. The study recommends enhanced user education, expanded operating hours, increased acquisition of relevant electronic resources, and ICT infrastructure upgrades to improve access and overall satisfaction with library services.

Ala and Mezbah-ul-Islam (2021) investigated user satisfaction with Koha-based Integrated Library Systems (ILS) across public universities in Bangladesh. Based on responses from 185 users, the study revealed moderate satisfaction, with science universities reporting the highest engagement. Core features like OPAC and circulation services were well received. However, 42% of respondents had never used the ILS, indicating a lack of awareness. The study emphasized the importance of user training, increased promotion of digital systems, and periodic system evaluation. Findings suggest that broader user outreach and education are essential to enhance the effectiveness of Koha-based ILS implementations in academic libraries.

Chand (2021) evaluated satisfaction with open-access and subscription-based e-resources in health-related institutions across India. The study recognized the growing importance of electronic resources in medical and health sciences, with around 30,000 journals and thousands of articles published daily. It found that users relied heavily on e-resources for academic and clinical purposes. Satisfaction was generally high, attributed to 24/7 availability and information richness. However, usability and infrastructure posed occasional challenges. The study recommends continued investment in high-quality e-resources, improved search platforms, and technical support to meet the evolving demands of students, educators, and healthcare professionals in the digital age.

Rani and Kaur (2021) conducted a comparative study of e-resource usage and satisfaction among faculty in science and social science disciplines at selected universities in Haryana. All respondents were aware of e-resources, with science faculty showing higher usage and satisfaction, especially regarding e-standards, anti-plagiarism tools, and subject portals. Social science faculty reported more challenges accessing relevant content. The study highlights a digital divide across disciplines and calls for targeted support, including tailored training and improved resource accessibility. Bridging these gaps could promote equitable digital literacy and ensure more balanced satisfaction levels across academic departments.

Hindagolla (2021) surveyed 442 undergraduates at the Science Library, University of Peradeniya, to assess

satisfaction with library services. Over 60% visited regularly for reading, photocopying, and borrowing. High satisfaction was reported for print services and staff assistance, but electronic resources and audio visual materials received low ratings (39% and 32%, respectively). Barriers included limited computers, poor Wi-Fi, and lack of awareness about digital platforms. Despite these issues, students commended the staff's helpfulness. The study recommends awareness promotions and ICT infrastructure improvements to enhance digital engagement and provide a more comprehensive academic support system for users.

Partap and Manju (2021) investigated the use and satisfaction levels of e-resources among architecture students at Chandigarh College of Architecture. With an 84.66% response rate from 127 students, the study found over 90% actively used e-resources for research and academic writing. Nearly half relied exclusively on digital resources, while 31% used both print and electronic materials. Despite high satisfaction, users cited issues such as slow internet, limited digital literacy, and difficulty locating information. The authors recommend improved internet connectivity and integrating digital training into the curriculum to better equip students for effective use of e-resources in architectural education.

Ansari (2020) assessed awareness, usage, and satisfaction with e-resources among research scholars at Banaras Hindu University. Most users reported moderate to high satisfaction due to benefits like flexible access, time-saving features, and mobile usability. However, challenges such as limited technical skills, slow internet, insufficient infrastructure, and low awareness of specialized e-journals hindered optimal use. Many lacked training on e-resource navigation. The study recommended improving connectivity, expanding e-journal collections, conducting regular user training, launching awareness programs, and setting up help desks. These interventions aim to improve satisfaction by ensuring more efficient and informed use of e-resources among humanities scholars.

Amarasekara and Marasinghe (2020) assessed user satisfaction with library services at the Open University of Sri Lanka's Colombo Regional Centre. Surveying 357 users, the study reported high satisfaction with library staff support, moderate satisfaction with general services and digital access, and lower satisfaction with digital literacy training and audio-visual resources. Users frequently visited the library for reading, internet access, and book borrowing. Gaps were identified in awareness, online service promotion, and infrastructure. Recommendations included improving online services, boosting user orientation, and expanding access to digital content to enhance overall satisfaction and support library services.

with modern user expectations.

Taufiq, Rehman and Ashiq (2020) observed user satisfaction and challenges in public libraries in Lahore, Pakistan. Users were generally satisfied with traditional services such as book borrowing and reading spaces. However, dissatisfaction was reported with digital services due to limited internet access and poor user engagement. The study highlighted the need for formal policies to improve service quality standards in public libraries. Recommendations include expanding digital infrastructure, developing user-friendly platforms, and promoting modern services to enhance user satisfaction and library relevance in an increasingly digital learning environment.

Osimehta (2019) exposed e-resource usage and satisfaction among undergraduate students at the National Open University of Nigeria. Surveying 722 users, the study found high satisfaction with e-books and especially because it's easy to use and important for academic work. However, poor internet, limited infrastructure, and underutilization of available tools reduced overall satisfaction. Regression analysis showed a positive correlation between e-resource availability and user satisfaction. The study recommended enhancing ICT infrastructure and launching orientation programs to increase digital awareness and maximize the academic value of e-resources.

Kasimani and Rajendran (2019) assessed user satisfaction at Thiruvallur District Central Library through a descriptive survey of 250 users. Most respondents were young adults visiting for academic reading, book borrowing, and newspaper access. Satisfaction was high for staff services (56.4%) and access to information (49.6%), though improvements were needed in content diversity and services. Users spent one to two hours per visit, reflecting regular engagement. The study recommended updating reading materials, expanding service hours, and offering targeted support for competitive exam preparation to improve satisfaction further and modernize public library services.

Saini and Kaur (2019) investigated the use and satisfaction with e-resources among faculty and students at DAV College libraries in Haryana. Findings showed high satisfaction due to regular access to e-books and e-journals, supported by strong IT infrastructure and participation in programs like N-LIST and the National Digital Library. However, gaps in digital literacy remained. The study emphasized the importance of expanding e-collections and recommended conducting orientation sessions to improve users' ability to locate and utilize e-resources effectively, thereby enhancing academic outcomes and user satisfaction in college libraries.

Sundareswaran (2019) studied user satisfaction with public libraries in Salem District, Tamil Nadu. With 186 respondents, the study reported moderate satisfaction levels,

especially regarding journals and internet services. Over half the users sought help from library staff, reflecting reliance on LIS professionals. While few users reported serious service issues, recommendations included expanding digital and print collections, improving infrastructure, and deploying skilled professionals. Enhancing facilities and services was seen as vital to improving satisfaction and modernizing public library offerings in regional settings.

Razika Mohammed Yahaya (2019) assessed satisfaction with information resources in Nigerian agricultural research institute libraries, surveying 946 users. While users acknowledged the availability of resources, satisfaction varied due to outdated materials, inconsistent electricity, and limited awareness of services. Recommendations included updating collections, increasing user awareness, and adopting solar power to ensure uninterrupted access. Overall, satisfaction was moderate but could be significantly improved through better infrastructure and communication strategies. The study highlights the need for modernization and proactive library management in research-focused institutions.

Khan, Modak, and Bajpai (2018) analyzed usage patterns and satisfaction with automated library services at Era University among faculty and students from health-related disciplines. Users primarily accessed the library for self-study and digital resources like e-books and journals. Satisfaction was moderate to high, with positive feedback on resource availability but concerns over usability and access barriers. The study recommended developing virtual platforms, improving online access, and initiating regular orientation programs to enhance familiarity and satisfaction with digital library services in healthcare education environments.

Ramesha, Urs and Talawar (2018) evaluated the use of e-resources in pharmacy colleges affiliated with Rajiv Gandhi University of Health Sciences, Bengaluru. Users reported moderate satisfaction, particularly regarding relevance and academic support. However, actual usage was low compared to investments made. Limited infrastructure, insufficient awareness, and lack of user training were cited as key barriers. The study stressed the need for strategic improvements in digital infrastructure and continuous training to boost utilization and satisfaction with e-resources in pharmacy education.

Bajpai & Sharma (2017) examined ICT's impact on special libraries in Delhi NCR, assessing user awareness, satisfaction, and challenges in e-resource use. Findings showed high awareness of search engines (87.1%), e-journals (84.2%), and e-books (80%). Key usage purposes included coursework (61%), research (57.7%), and accessing current information (55.9%). Despite frequent library visits (58.5%

daily), issues like slow internet, limited awareness, and inadequate user guidance hindered optimal use. The study emphasizes the need for better digital infrastructure, targeted training, and awareness programs to enhance e-resource accessibility and effectiveness in special libraries.

Gautam & Sinha (2017) investigated e-resource usage among research scholars and faculty at the University of Allahabad. Most users expressed high satisfaction with accessibility and availability. Challenges included low computer literacy and power outages, limiting seamless access. Recommendations included user orientation workshops, continuous power supply, and improved networking infrastructure. The study highlighted ICT's vital role in transforming academic libraries and facilitating access to digital content for academic and research purposes. Emphasizing training and infrastructure improvements, the study calls for institutional strategies to support growing digital needs in university environments.

Padmavathi, Nagaiah & Kavita (2017) assessed user satisfaction with library services at Bangalore University among students and faculty. The study analyzed usage patterns of physical and digital collections, purposes of library visits, and search methods. Results indicated high user satisfaction regarding resource availability and service quality. Suggestions included longer operating hours and more textbook circulation. Findings emphasize continuous improvement in library resource availability and service efficiency to support academic and research needs. Enhancing user experience and meeting the growing demands of the academic community remain key priorities.

Tlakula & Fombad (2017) conducted a qualitative study at the University of Venda to explore e-resource usage among third-year undergraduates. Interviews revealed limited use of databases beyond SABINET and EBSCOhost, with students often confusing academic databases with general internet sources. Minimal training—mainly a one-time orientation—contributed to low awareness and usage. The study emphasized the necessity of ongoing, targeted information literacy programs to improve student engagement and access to academic digital tools. It highlights the challenges faced by students in disadvantaged institutions and recommends structured training to maximize e-resource utility.

Yebowaah (2017) assessed e-resource usage among lecturers at the University for Development Studies, Wa Campus. Although 88.8% were library users and 65% were aware of e-resources, actual usage was low. Barriers included slow internet, insufficient trained staff, and poor infrastructure. The study found that library visitation motives and awareness levels significantly influenced usage rates. To boost satisfaction and usage, recommendations included user and staff training, infrastructure upgrades, and awareness

campaigns. The findings underscore the importance of addressing infrastructural and knowledge gaps to optimize e-resource benefits for academic staff.

Akpojotor (2016) explored awareness and usage of electronic resources among LIS postgraduate students in Southern Nigeria. The study found high awareness and positive attitudes, with e-resources considered highly useful for academic work. Students appreciated their relevance, accessibility, and convenience. Similarly, Edem & Egbe (2016) examined postgraduate students at the University of Calabar, revealing overall satisfaction with the quality and accessibility of e-resources. Both studies emphasized the importance of institutional support, consistent access, and user training. They underscore the growing role of digital platforms in academic success and the necessity of maintaining infrastructure and awareness programs for continued user satisfaction.

Owolabi, Sola & Okocha (2016) surveyed undergraduates at the University of Ibadan to evaluate e-resource usage and satisfaction. Despite challenges like poor internet, unstable power supply, and limited computer access, students frequently used e-resources for academic activities. Satisfaction levels were moderate to high, with students finding resources relevant and helpful for learning. The study highlighted the importance of ICT in higher education and recommended upgrading infrastructure and increasing access terminals to enhance user experience. Addressing technical barriers could further improve satisfaction and promote more consistent use of electronic information resources in academic settings.

Veena G. (2016) studied the awareness and use of open access electronic resources among postgraduate students at Mangalore University. Using data from 152 respondents, the study revealed frequent use of open access e-books and journals (47.36%) and showed that 64.47% of users were satisfied. Most students learned usage skills from faculty and research supervisors. Despite generally positive experiences, the study called for improved awareness and training programs to encourage wider and more effective use. Findings reinforce the importance of open access in academic environments and the need to strengthen user support for maximizing digital resource impact.

Vijayakumar & Gopalakrishnan (2016) evaluated digital library services across Tamil Nadu's university libraries by surveying LIS professionals. Out of 520 questionnaires, 372 valid responses revealed that 58.1% of professionals were highly satisfied with digital library services, and 25.8% found the websites usable and flexible. Most respondents were assistant librarians, with representation from state and deemed universities. The study highlighted favorable user perceptions of digital libraries but identified areas needing

improvement, including website functionality and user engagement. It concluded that further development of digital infrastructure and services could enhance resource delivery and professional satisfaction.

Deepmala & Upadhyay (2015) investigated e- resource use among engineering students in Greater Noida. The study showed high engagement with e- journals and databases for academic purposes among B.Tech and M.Tech students. While users appreciated the speed and convenience of digital resources, issues like slow internet, limited subscriptions, and lack of training hindered optimal use. Students favored digital over traditional resources, signaling a shift in information behavior. Recommendations included enhancing connectivity, conducting training programs, and increasing resource awareness. The study emphasized the transformative effect of e-resources on academic research and the need for supportive infrastructure and policies.

Janakiraman & Subramanian (2015) assessed ICT utilization and satisfaction in R&D libraries across Chennai, surveying 41 institutions with 30 valid responses. The study examined gender and age-based ICT experience, revealing that male librarians and those aged 35–40 had greater experience. Engineering institutions had the highest representation of ICT users. A large majority (83.3%) had used open access journals, and no gender disparity was observed in usage. Overall satisfaction with ICT use was high, though older professionals showed limited engagement. The study highlights the need for continuous ICT training and support, particularly for staff in less tech- savvy domains.

Sujatha (2015) conducted a quantitative study at Kakatiya University to assess user satisfaction as a performance indicator for academic libraries. The research focused on library services, electronic resources, and combined resource effectiveness. Based on responses from 178 valid participants (out of 220 targeted), the study found varied satisfaction levels, with electronic resources rated positively but print-electronic integration needing improvement. The study emphasized the importance of user-centric evaluation in library management and resource planning. It recommended ongoing feedback collection and enhanced service quality to improve satisfaction and support the university's academic mission more effectively.

Pandiya & Sarmah (2014) evaluated user satisfaction at the IIM Lucknow library, focusing on infrastructure and service delivery. Students were highly satisfied with the physical environment— location, ambiance, and layout—but expressed dissatisfaction with service components like orientation programs and new arrivals displays. Moderate satisfaction was recorded regarding digital initiatives, including use of institutional repositories. The study concluded that service design should be tailored to user

expectations and suggested enhancements in digital engagement, user support, and personalized services. It recommended that academic libraries invest in both physical upgrades and improved service delivery to align with evolving user needs.

Rani & Chinnasamy (2014) explored the impact of e- resource services on user satisfaction in self- financing colleges affiliated with Madurai Kamaraj University. Using data from 216 students, the study found that efficient and accessible e-resource services significantly influenced user engagement and satisfaction. Key recommendations included improving user support, enhancing service awareness, and developing user-oriented strategies to increase utilization. The study confirmed that the quality of service delivery directly affects user satisfaction and e-resource usage rates. Academic libraries were encouraged to invest in training and communication efforts to better align their services with user expectations and educational goals.

Chopra & Kaur (2013) studied electronic resource utilization and satisfaction among research scholars. Findings revealed a preference for e-journals as the main academic resource, with electronic theses also valued. Although e- resources were widely adopted, scholars viewed them as complementary rather than replacements for print materials. High satisfaction was reported concerning accessibility, usability, and relevance, with benefits including ease of access and time savings. The study underscores the growing role of e-resources in research while emphasizing the need for ongoing support and training to maximize user experience and sustained engagement with digital libraries.

Sivathaasan & Velnampy (2013) examined the impact of e-resource usage on faculty academic performance at the University of Jaffna. Surveying 88 teachers, the study found a strong positive correlation ($r = 0.623$, $p < 0.01$) between e-resource use and performance. Regression analysis showed e-resources explained 38.8% of performance variance. These findings highlight e-resources' critical role in enhancing faculty productivity and teaching quality. The study supports earlier research demonstrating ICT's transformative potential in academia and calls for strategies to increase digital resource access and effective utilization to improve educational outcomes.

Amjad, Ahmed & Naeem (2013) also investigated e- resource use among research scholars at The Islamia University of Bahawalpur. With 133 valid responses, 61% reported daily use primarily for academic purposes, and 57% expressed satisfaction with accessibility and usability. Learning, education, and research were main motivators, facilitated by ease of use. However, unreliable internet connectivity was a major challenge. The study stresses e-resources' role in supporting scholarship while highlighting

infrastructural improvements and user training as essential to optimizing usage and satisfaction.

Thanuskodi (2012) explored ICT's impact in rural Tamil Nadu higher education institutions. Over 73% of students used the internet primarily for academics, with many gaining ICT skills through college training. ICT improved teaching, learning, and research despite infrastructural limitations like paid internet access. Initiatives such as UGC-Infonet Digital Library Consortium enhanced content availability. The study noted high user satisfaction but emphasized continued efforts in raising awareness, improving digital infrastructure, and training to further optimize e- resource usage in academic environments.

Navalur, Balasubramani & Kumar (2012) assessed e-resource satisfaction at Bharathidasan University among faculty, research scholars, and postgraduate students. Faculty and researchers showed high satisfaction and active use, while postgraduate student satisfaction was lower due to limited awareness. Common challenges included inadequate access terminals, slow internet, and unavailable print journal versions. Users requested more orientation and training programs. Despite difficulties, e-resources positively impacted academic productivity. The study suggests targeted awareness campaigns and infrastructure enhancements to improve usage and satisfaction across all user groups.

Thanuskodi (2012) noted that ICT adoption in Tamil Nadu colleges enhanced academic activities, despite limited infrastructure, and advocated continued training and awareness initiatives. Navalur et al. (2012) highlighted high faculty satisfaction with e-resources at Bharathidasan University but indicated postgraduate students needed greater orientation and access.

Pauline Adeniran (2011) found that although postgraduate users at Annamalai University preferred e-resources for academic writing, proficiency gaps and infrastructure deficits limited satisfaction. Sinha, Singha, and Sinha (2011) reported moderate usage among Assam University users, with training and infrastructure as key barriers.

Egberongbe (2011) revealed moderate satisfaction despite high dependency on e-resources at the University of Lagos, recommending training and improved infrastructure. Sudhier and Seethalekshmi (2011) found moderate satisfaction at the University of Kerala, with Google as the preferred search engine and calls for better facilities.

Natarajan et al. (2010) observed low e-resource usage despite availability at a university, attributing underutilization to awareness and technical issues. Finally, Ansari and Zuberi (2010) highlighted limited awareness and training hindering effective e-resource use at the University of Karachi, despite available infrastructure.

SUMMARY OF REVIEW OF LITERATURE

The literature review offers a critical analysis of national and international studies on the awareness, usage, and satisfaction of electronic resources (e- resources) in academic libraries. Key themes include user perception, accessibility, search behavior, and usage satisfaction. Findings suggest that institutions with strong ICT infrastructure show higher user satisfaction, while those in under-resourced areas face challenges like poor internet access, outdated technology, and lack of training. Variations in usage are observed across disciplines, age groups, and gender. The review highlights the importance of enhancing digital infrastructure, expanding resources, promoting user awareness, and providing staff development. It lays a foundation for future research by identifying gaps and stresses the need for user-focused strategies to ensure equitable and efficient e-resource access.

RESEARCH GAP

Even though electronic resources are widely used in academic libraries, very little research has been done on how they are used and how satisfied users are in semi-urban and rural universities of Haryana. Most studies focus on other states or countries, and do not look at the unique problems faced in Haryana. Poor digital infrastructure and lack of proper support in many universities make it harder for students and teachers to use these resources. So, a detailed study is needed to understand their experiences, find the challenges they face, and suggest practical solutions that fit the specific needs of this region.

CONCLUSION

The study highlights that user satisfaction with e- resources among faculty members and research scholars, particularly in the science and technology domains, is generally moderate to high across national and international university libraries. Satisfaction levels are closely linked to the quality of institutional infrastructure, ease of access to digital platforms, and the availability of user support services. Respondents reported favorable experiences when digital resources were readily accessible, well-organized, and supported by responsive library staff. However, significant disparities remain in rural and semi-urban institutions, where challenges such as limited bandwidth, outdated ICT tools, and lack of training hinder optimal use. The findings suggest that satisfaction is not solely dependent on the availability of e-resources but also on users' digital competencies and institutional support systems. The conclusion emphasizes the urgent need for academic libraries to invest in user- centric digital services, prioritize ICT enhancement, and implement continuous training and evaluation programs to foster equitable and effective use of electronic resources.

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