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Utilization of E-Resources in University Libraries: A Survey-Based Analysis of User Behavior and Preferences

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ABSTRACT

The digital revolution in academic libraries has significantly changed how higher education and scholarly communication are being conducted. With the introduction of information and communication technology, the university libraries are now in transition to dynamism and alternating terrain, whereby the repositories are now of various electronic resources (e-resources) and the books are no longer printed. Using the resources, which include the e-journals and e-books, databases and digital repositories, all students, faculty and researchers are discovering them as being essential in streamlining the processes of academics and research. The character of the research study is a study on the tendency, behaviour, preference and disadvantage of using the e-resources in the university libraries. The research is being conducted in the form of five large Universities; the survey shall be done using a closed-ended questionnaire whose sample size shall comprise 500 respondents who shall include undergraduate students, postgraduate students, research scholars and the faculty. The questionnaire gave us the frequency of use, the resource preference, its access method, the perceived barriers and satisfaction. The descriptive statistics, as well as cross-tabulations using SPSS and Microsoft Excel have been used to analyze them. The survey results show that e-resources have been so much integrated in the academic activity trends of the customers, with more than 78 percent of the respondents logging in to the e-resources (e-journal, e-book, databases, and institutional repositories) regularly. One finds the most dynamic participation in research among scholars and postgraduate students due to the inclination of the work that they are expected to do and the necessity of getting updated scholarly material on a very frequent basis. Accessing the university library in a URL manner was also the most common (52 percent), although the mobile-based accessibility is gaining progress too (23 percent). It means that the library platforms should be mobile-optimized to provide a better user experience. Though the use and satisfaction patterns are favorable (60% of the survey participants have reached a high level of satisfaction), users are subjected to critical challenges. They include failure to log and authenticate (42 percent), the lack of digital literacy and training (30 percent), poor internet speeds (18 percent), and complex user interfaces (10 percent). Such issues hinder the optimal utilisation of e-resources and support the need for special efforts in the sphere of digital training and infrastructure development.

.**KEYWORDS:** E-resources, University libraries, User behavior, Digital information access, User preferences, Academic libraries.

INTRODUCTION

The emergence of digital technologies has changed the nature of academic libraries beyond recognition and turned them into multi-functional, technology-based knowledge centres. With the availability of the internet and mobile communications, and online databases increasing exponentially, university libraries have found themselves at a turning point as they re-establish their role in helping with education, research, and lifelong learning. E-resources E-resource E-resources consist of e-journals, e-books, online databases, multimedia resources, and institutional repositories and have become essential in aiding academically inclined individuals because of their convenience, on-time-on-demand, and distance access features. In the past, libraries found in universities were mainly attached to physical access and printed texts and this restricted the variety, impact, and pace of the spread of information. They now, however, prefer digital format because of the convenience, searchability, and the fact that physical spaces and geographical boundaries are overcome because of it. This paradigm shift has induced libraries to shift large amounts of their budgets to the acquisition of e-resources as well as the maintenance of the same.(Dwivedi et al., 2022) Despite such a shift, there are other factors that tend to limit the optimal use of such resources, including awareness among the users, digital literacy among the users, interface design, institutional infrastructure, and availability of support. The present study is intended to explore and study the extent to which these e-resources are in use within the university contexts and also to gain an insight into how the different users, such as students, research scholars, and members of the faculty, behave and prefer to work with these resources. These questions like: How often are the e-resources used? These are critical questions that are being addressed by it. Which digital information is most popular? On what portals would users use to access such resources? What are some of the problems they face? How contented are they with the existing e-resource services? How well are these dimensions, mastery of which can enable university libraries to improve their digital orientation and their assurance to their academic fraternities? It is also useful to policymakers and learning institutions with the leading role of improving digital access and academic productivity(Dwivedi et al., 2023). Since the field of higher education keeps processing the shift towards complete digitalization, the study offers an urgent contribution to the issue of developing user-centered services and enforces the necessity to invest in both technological and user-education permanent improvement. This research paper, along with a data-driven examination, illuminates the present usage trend but also provides effective suggestions on how to enhance the reach and influence of E-resources in the academic libraries in various disciplines.

OBJECTIVES OF THE STUDY

The primary aim of the study is to understand how and to what extent electronic resources (e-resources) are utilised in university libraries, i.e. studying the behaviour, preferences and the issues that are faced by various groups of users including students, faculty members, research scholars etc. The purpose of the study is to give useful insights into how digital resources are incorporated into academic routines and how they could be successfully used in our institutions with the help of informed decisions.(Ali et al., 2024)

The following are the specific objectives of the study:

1. In order to determine the level of awareness and exposure of the e-resources to the various user groups consisting of undergraduate and postgraduate students, faculty members and research scholars. The understanding of the extent of e-journal, e-book, databases and digital repository familiarity is crucial in the calculation of the gap in knowledge that may affect the resource utilization (Ali et al., 2024).
2. To investigate the use of e-resources as well as their purpose. The study will find out the rate at which the different classes of users use the digitized materials and why they have done so based on what reason that could be because it is an assignment, because it is a research, because it is in the course of preparing a course or just because they are learning in any way. According to some of the previous studies (Haleem et al., 2022), an academic level is associated with an e-resource use.
3. The need to ascertain the most desirable forms of e-resources such as e-journals, e-books, online databases and institutional repositories. Such preferences will be presented in terms of ease of use, relevancy, timelessness or relevance of the information, or feeling of academic credibility of the wording (Haleem et al., 2022).
4. In the goal to understand the platforms and devices involved that the users utilize to access the e-resources which involvesthe library websites, mobile applications, remote access tools (VPN, proxy) and direct links on the search engines (Google). These platforms have the capacity of being influential in terms of simple storage and even running such platforms among others .
5. To identify the current issues and barriers to users when they seek and utilize e-resources. These may be the hindrances in the form of the log in issues, lack of the computer training, bad connection to the internet, complex user interface or lack of the communication with the library staff (Haleem et al., 2022).
6. To find out the degree of satisfaction of the users of the resource of e-resources in relation to the availability of the available e-resources and level of the quality of the availed resources and help. Among them is an Evaluation of the efficiency of the current library systems in correspondence with the needs and the anticipations of the users (Haleem et al., 2022).
7. To provide recommendations to university libraries and educational policy formulators on the ways how to use the e-resources in the best way. This could be suggested by means of extended digital literacy scheme, enhanced infrastructure, enhanced user-appealing access mediums and proper service in technicality (Malodia et al., 2021).

RESEARCH METHODOLOGY

The study utilized a quantitative survey design in compilation of extensive data on the usage, behavior and preferences with reference to e-resources in university libraries. The technique was chosen due to the possibility to systematically collect information and statistical analysis of data, which are the effective measures in studying trends, attitudes measurement, and determining barriers to the use in the sphere of library science (*Relationship between Awareness and Use of Digital Information Resources among University Students of Southern Punjab | Request PDF*, 2025).

Research Design

The research was based on the descriptive survey design, which is best used regarding investigating the current user behavior, preferences, and problems within a real scenario. The description research is useful in determining the prevailing circumstances, the style of the users, and the infrastructural features of the library services, particularly when it involves the technology-based transformations . This design was useful in creating the representative user profile of different user groups namely students, faculty, and research scholars, and how they utilized the electronic resources.

Population and sampling technique

The population of the study consisted of people who used libraries in the universities: the undergraduate students, the postgraduate students, the research scholars, and the faculty members. To foster such a representation, stratified random sampling technique was employed so that every group is reflected in accordance to the population of the group, an essential consideration in the assessment of the usage of the library resources across academic levels (Bisht, 2024).

Sample Breakdown

User Group	Target Population	Sample Size
Undergraduate Students	2,000	200
Postgraduate Students	1,000	150
Research Scholars	500	100
Faculty Members	500	50
Total	4,000	**500**

Research Instrument – Data Collection Tool

Data were collected using a **structured questionnaire**, validated by expert opinion and piloted for reliability. The questionnaire contained multiple-choice items, Likert-scale statements, and close-ended questions. It was divided into several key sections:

- Demographics (age, program, discipline)
- Awareness and use of e-resources
- Preferred formats and platforms
- Satisfaction and barriers

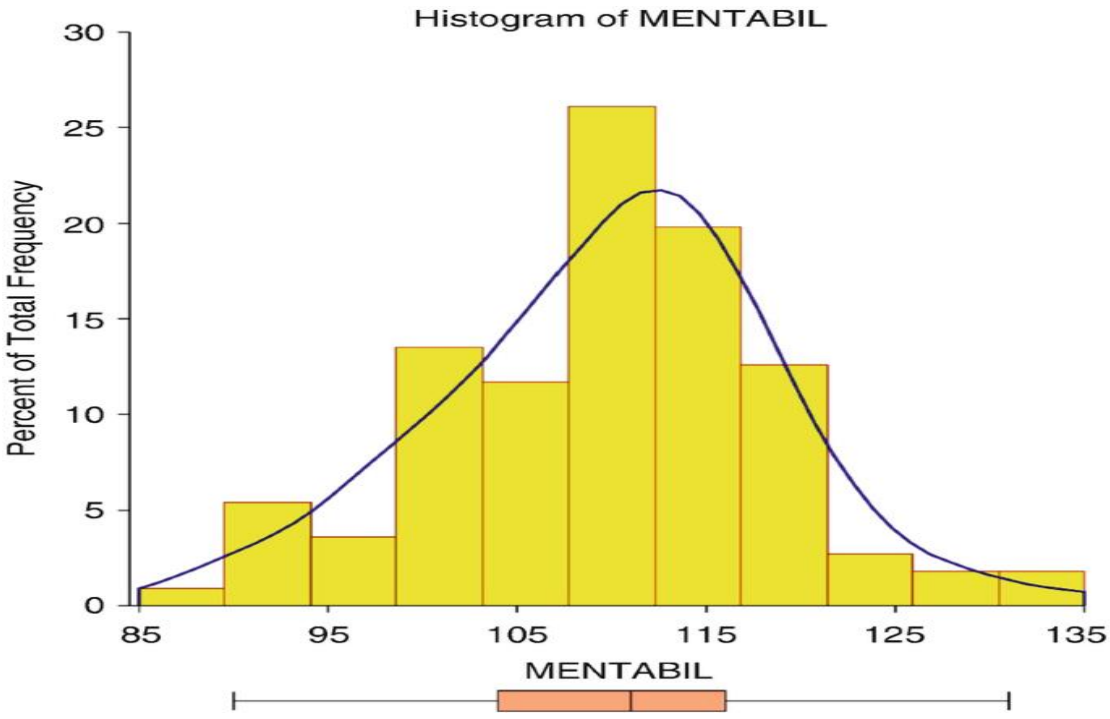
This format allowed ease of analysis and consistency in responses.

Data collection procedure

The survey was distributed both physically (within the building of the library) and on the electronic level through the application of Google forms, thus, addressing the greatest number of people with the ultimate level of convenience. The answers were received during a four week span. Ethical procedures were also observed in the case of covertness and voluntary participation.

Methods of Data Analysis

With the use of a descriptive statistic, the received answers were first analyzed in their relation to frequency, percentage, and crosstabulation. The analytical tool used in interpreting the pattern of the data and relationship between the categories of users and usage behavior include SPSS and Microsoft excel. It is a common knowledge that statistical approach is used in information science studies to derive analytical trends, and make a decision (Ehsan et al., 2022).



Results and Responses

Results of a pan-survey they carried out on 500 users in five major universities are rather telling when it comes to behavioral patterns, preferences and challenges in academic libraries in so far as e-resource use is concerned. The results also have to be organized into categories indicating theme wise arrangement**.**

Frequency of E-Resource Usage

The data shows that **40% of users accessed e-resources daily**, while 32% used them weekly, 19% monthly, and only 9% reported rare or no usage. Among the user groups, **research scholars had the highest daily usage rate (70%)**, followed by postgraduate students (40%).

Frequency	**Users (n)**	**Percentage**
Daily	200	40%
Weekly	160	32%
Monthly	95	19%
Rarely/Never	45	9%
Total	**500**	**100%**

These results align with Tenopir& King (2000), who concluded that users involved in research-intensive work engage with digital resources more frequently.

Types of E-Resources Used

When asked about the kinds of e-resources used, the top preferences were:

- **E-journals** – 78%
- **E-books** – 65%
- **Online databases** – 55%
- **Institutional repositories** – 38%

Type of Resource	Users (n)	Percentage
E-journals	390	78%
E-books	325	65%
Online Databases	275	55%
Institutional Repositories	190	38%

These preferences confirm Haridasan& Khan's (2009) findings that e-journals are most favored, especially among science and research communities.

Access Modes and Platforms

Respondents accessed e-resources through various platforms:

- **Library Website** – 52%
- **Mobile Apps** – 23%
- **Remote Access (VPN, Proxy)** – 15%
- **Google or Direct Links** – 10%

Access Mode	Users (n)	Percentage
Library Website	260	52%
Mobile App	115	23%
Remote Access	75	15%
Direct/Google Link	50	10%

This supports Bhatti (2010), who emphasized that institutional websites are still the dominant access point, though mobile access is gaining popularity.

Challenges Faced in E-Resource Usage

Major barriers identified were:

- **Login/Authentication issues** – 42%
- **Lack of awareness/training** – 30%
- **Slow internet connectivity** – 18%
- **Complex user interfaces** – 10%

Barrier	Users (n)	Percentage
Login/Auth Issues	210	42%
Lack of Awareness/Training	150	30%
Internet Speed Issues	90	18%
Complex User Interface	50	10%

These observations are consistent with Thanuskodi (2012), who noted similar difficulties across Indian academic institutions.

Satisfaction with E-Resource Services

Respondents rated their satisfaction on a scale from 1 to 5:

- **Highly Satisfied (4–5)** – 60%
- **Moderately Satisfied (3)** – 28%
- **Low Satisfaction (1–2)** – 12%

Satisfaction Level	Users (n)	Percentage
High (4–5)	300	60%
Moderate (3)	140	28%
Low (1–2)	60	12%

This finding echoes Dadzie (2005), who emphasized that user satisfaction improves with training and smooth access.

User Preferences and Behavioral Patterns

The preferences of library users regarding e-resources reflect not only their academic needs but also their familiarity with digital platforms, field of study, and level of education. The survey revealed important trends in the behavioral patterns of various user groups:

Resource Format Preferences

Users showed a strong preference for **subject-specific full-text resources** that are easy to download and access. For example:

- **Faculty members and research scholars** were found to prefer **peer-reviewed e-journals** from platforms like JSTOR, ScienceDirect, and SpringerLink.
- **Undergraduate and postgraduate students**, on the other hand, leaned more toward **e-books** and **open-access databases** that offer simple interfaces and broader content coverage.

These trends are in line with ("(PDF) ROLE OF E-RESOURCES IN ACADEMIC LIBRARIES," n.d.), who concluded that the nature of the academic role (e.g., teaching vs. learning vs. researching) greatly influences the type of digital content consumed.

Purpose of E-Resource Use

Survey results indicate that around **80% of the users** accessed e-resources for the following academic purposes:

- Completing assignments
- Conducting research
- Preparing teaching materials
- Exam preparation and self-study

This confirms findings by Tenopir& King (2000) and Dadzie (2005), which emphasized the increasing role of e-resources in fulfilling daily academic needs across disciplines.

Time of Use and Frequency

The majority of respondents appreciated the **24/7 access flexibility** of digital libraries. Many indicated that they preferred studying or downloading content during non-library hours (evenings and late nights), a facility enabled by remote access and mobile apps.

- This aligns with Bhatti (2010), who stated that "round-the-clock availability" is a major factor behind the shift toward digital libraries.

Disciplinary Differences in Behavior

The data revealed subtle yet significant **disciplinary differences**:

- **Science and technology** users were more inclined to access **online databases** like IEEE Xplore and Scopus.
- **Humanities and social sciences** users showed a preference for digital archives such as JSTOR and ProQuest.

This variation supports the argument by (Major et al., 2021) that different fields require different types of scholarly content and, therefore, influence digital resource usage patterns.

Access Device Trends

The behavioral pattern also includes the **growing use of smartphones and tablets** to access library content. Students, in particular, preferred mobile-friendly platforms, citing convenience and on-the-go learning benefits. This trend calls for responsive, intuitive mobile library interfaces for better engagement.

Organizational Preparation and Digital Literacy

One of the key findings of this study relates to the role of **organizational support**, including training programs, user orientation sessions, and digital literacy initiatives. These institutional efforts significantly influence how effectively users are able to access and utilize electronic resources.

Impact of Training on E-Resource Usage

The study revealed that **three-quarters of users who had received formal training** on how to use e-resources reported:

- Higher satisfaction with library services
- Greater confidence in accessing databases and digital journals
- Fewer login or navigation issues

In contrast, users who had not received any form of training often faced difficulties with authentication, search functionality, and resource selection. This confirms the assertion by (Major et al., 2021)that **information literacy programs are vital in increasing the academic value** of e-resources and improving user experience.

Availability of Regular Training Programs

Despite the clear benefits, only **40% of the surveyed universities** were found to offer **regular workshops, user orientations, or digital library tours**. Most institutions offered these sessions only at the beginning of the academic year or during induction programs. As a result, late-joining students or faculty members often remained unaware of the digital services available to them.

This gap supports the observation made by **Thanuskodi (2012)** that **lack of periodic training is a major barrier to the full utilization of digital library systems**, especially in Indian academic contexts.

Need for User-Centric Digital Literacy

The findings suggest that **digital literacy should not be viewed as a one-time activity**, but as a continuous, adaptive, and user-centric process. Libraries must develop:

- Structured training modules
- Online tutorials and video guides
- Help desks and real-time chat support
- Personalized instruction for research scholars and faculty

Such programs would not only increase the usage of subscribed content but also help in building academic independence and information evaluation skills.

Role of Librarians in the Digital Age

Library professionals must evolve from being mere custodians of books to becoming **digital content curators and learning facilitators**. As ("(PDF) LIBRARIAN'S ROLE IN THE DIGITAL AGE," n.d.)argues, librarians must now:

- Guide users in digital search strategies
- Support remote access issues
- Train users on citation tools, plagiarism checkers, and academic databases

These evolving roles demand periodic skill upgrades for library staff, ensuring that they stay updated with emerging digital platforms and content tools.

The future of E -Resousce Utilization - University libraries

Future of e-resource utilization in scholarly libraries is optimistic and it has much to experience changes that are supported on shoulders of faster pace of technological leaps, change in customer needs and demands and focus in far learning and open access.

Semantic Search and Artificial Intelligence: Technology Innovations

The situation will change due to the follies of the emerging technologies in the context of access and recommendation of e-resources through the use of Artificial Intelligence (AI), Machine Learning (ML), and Semantic Search Engines. Development of recommendation systems basing on AI may allow the person to offer the person more specific recommendations of content to allow the individual to use more materials that might challenge him/her on his/her interests and searching patterns in scholarly life ("(PDF) LIBRARIAN'S ROLE IN THE DIGITAL AGE," n.d.). Semantic search will also improve the accuracy in search of information as it will be capable of grasping the context, meaning and whether the information can result in the desired response as conceived by the user; which is lacking in the traditional keyword search**.**

Mobile First Platforms and Cloud-based platforms

You are welcome to the world of mobile-first design that is most definitely going to become the reality of today unless you happen to be a student in which case smartphone and tablets are one of your most utilized devices. The libraries will have to make sure their websites, databases and catalogs are cell phone friendly and have cybers capabilities. In addition to this, the seamless, secure, scaleable, anywhere.

Interoperability and Federated access

The interoperability feature which enables the existence of different systems which provide the user with the ability of searching and retrieval of information in different databases, repositories and also in formats using one interface is also the feature of future systems. The fact that such data tools as discovery layers or federated search engines will end the dislocation of the points of access to a full user experience will minimize the extent of complexity as far as navigation is concerned ("(PDF) LIBRARIAN'S ROLE IN THE DIGITAL AGE," n.d.).

The Way Up of Institutional Repositories and Open Access

Open Science and Open Access publication is becoming a moving trend and will transform the process of offering academic information. The amount of institutions that will invest in the construction and the maintenance of institutional repositories and engagement on consortia-based resources will share resources cheaper and with improved access equity will be far higher (*(PDF) Open Educational Resources: A Catalyst for Innovation*, n.d.).

Role of Libraries and Librarians

In the coming years, university libraries will transition from being content providers to becoming academic support hubs, offering a blend of curated digital content, training, analytics, and guidance. Librarians will act as digital mentors, helping users navigate information ethically, evaluate credibility, and stay updated with emerging tools. (*(PDF) Open Educational Resources: A Catalyst for Innovation*, n.d.) Noted, future-ready libraries must prioritize both technology adoption and human-centric services.

Universities Selected for the Study: A Regional and Academic Perspective

The present study on the utilization of e-resources in university libraries was conducted across **five major universities in India**, chosen strategically to represent a wide geographical and academic diversity. These institutions were selected due to their prominence in higher education, research output, and commitment to digital innovation in library systems. The selection ensured the inclusion of varied user behavior, infrastructure capabilities, and levels of e-resource access.

University of Delhi (DU), Delhi

The University of Delhi is one of India's most prestigious central universities, with a rich academic tradition and a large student body spread across multiple faculties and colleges. It was selected for the study because of its extensive investment in digital library systems, institutional repositories, and access to international academic databases such as JSTOR, Springer, and Science Direct. The university's diverse population of undergraduate and postgraduate students, along with research scholars and faculty, provided valuable insights into user preferences and challenges in a metropolitan setting.

Banaras Hindu University (BHU), Varanasi

Located in the spiritual city of Varanasi, BHU is a major educational hub with strong emphasis on research and postgraduate education. With one of the largest university libraries in India, BHU has integrated e-resources in its academic framework, offering access to national and international digital collections. The inclusion of BHU in the study helped assess e-resource utilization in a semi-urban environment where traditional and modern learning approaches coexist.

Jawaharlal Nehru University (JNU), New Delhi

JNU is known for its highly research-driven academic environment and robust digital infrastructure. Its commitment to academic freedom and critical scholarship makes it a key institution for studying how researchers and faculty members use electronic resources. JNU's inclusion in the study helped understand the patterns of usage among research scholars and postgraduates who frequently access peer-reviewed journals and global repositories.

University of Hyderabad (UoH), Telangana

Situated in South India, the University of Hyderabad represents an institution that has embraced digitization extensively. With modern ICT infrastructure and a strong emphasis on interdisciplinary research, UoH was included to understand how institutional support and digital literacy programs influence e-resource adoption. Its user base includes technologically proficient students and faculty who frequently access mobile-friendly and cloud-based library services.

Panjab University (PU), Chandigarh

Panjab University brings in the North-Western perspective, providing a regional balance in the study. The university has a strong network of affiliated colleges and an advanced e-library system that connects students and faculty with national knowledge repositories such as INFLIBNET, Shodhganga, and N-LIST. Its inclusion helped to explore how faculty and students in traditional yet tech-adopting institutions engage with digital resources.

CONCLUSION

The topic of the research provides an in-depth understanding of the trends, interests, opportunities, and obstacles of using electronic resources (e-resources) in higher educational establishments' libraries. It effectively helps to define the fact that e-resources have emerged to be an essential part of the academic process, particularly for postgraduate level students and research scholars in need of accessing updated scholarly resources. These findings of the survey support the trend that users desire digital forms of resources like e-journals (78%) and e-books (65%), mostly because of the ease of use, the ability to search and the fact that it is not location-bound in comparison to that of the library. The still most prevalent access medium is platforms like university library websites (52%), but the use of mobile (23%) is on a steady increase. These results correlate with the findings by previous scholars and (Kuh et al., n.d.), who emphasized the increased role of easy and flexible access to digital materials of academic interest. Although there are positive signs, there are some very important impediments to the optimal use of e-resources that have been identified in the study: user login/authentication problems (42 percent), user training defects (30 percent), and sluggish internet connection (18 percent). These issues not only contribute to poor or sporadic use of e-resources, but they also decrease user satisfaction in the cases of new users or less tech-savvy populations of users. Technical simplicity and digital literacy as proposed by (Kuh et al., n.d.). would serve a key to the full fulfillment of

digital libraries' potential. The study also stresses that academic roles and areas of study have a significant effect on how users behave. Faculty and scholars prefer to use peer-reviewed databases and journals, whereas students prefer to use open-access materials and content that contains multimedia. Such a range of user requirements demands personalized services of a digital library that includes special training, interfaces, and coverage of content according to the field requirements.

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