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Use of Digital Library Resources among Postgraduate Students in Bhopal: A Survey-Based Study

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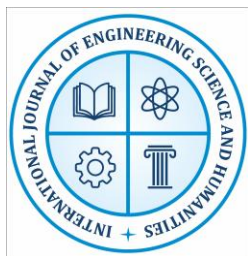
ABSTRACT

The present study investigates how postgraduate students in Bhopal use digital library resources using a descriptive survey research approach and a sample of 100 respondents. A standardized questionnaire was used to collect information on awareness, access patterns, objectives, preferences, motivating factors, challenges, and satisfaction levels. The findings show that 82% of postgraduate students are aware of e-journals, which are the most widely used digital library resource. Coursework and exam preparation emerged as the primary objectives, with easy accessibility and time-saving being the primary motivators for use. However, there are still significant challenges, including slow internet (68%), ignorance (55%), and insufficient training (52%). Just 42% have received official training, despite 68% saying they need it. Hypothesis testing revealed a substantial correlation between awareness/usage and demographic variables (discipline and institution), whereas a strong negative correlation ($p < 0.05$) was found between challenges and satisfaction. The study concludes that optimizing postgraduate students' usage of digital library resources in Bhopal requires enhancing internet infrastructure, increasing subscriptions, and providing targeted training sessions.

Keywords: Digital Library Resources, Postgraduate Students, Information Access, Digital Literacy, Academic Libraries.

1. INTRODUCTION

The advent of digital technologies has fundamentally transformed the landscape of information storage, retrieval, and dissemination, ushering in a new era in the domain of libraries and information services. Digital libraries represent a modern evolution of traditional libraries, offering vast collections of digitised materials accessible via computer networks [1]. Unlike conventional search engines, digital libraries emphasise structured organisation and long-term preservation of materials, serving as an essential extension of traditional library services [2]. An informal definition characterises a digital library as "a managed collection of information, with associated services, where the information is stored in digital formats and accessible over a network" [3]. This definition underscores three key components underpinning digital libraries: people, information resources, and technology [4]. Since the early 1990s, when traditional library



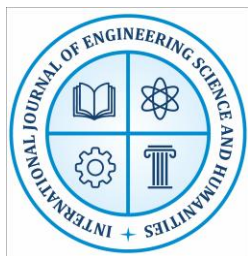
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systems were first galvanised by the sweeping possibilities of digitising centuries of paper artefacts and documents into computer databases, library scientists envisioned a global network of digitised materials accessible to individual users anytime on any computer [5]. However, the realisation of this bold vision has involved overcoming myriad complexities, including the design of architecturally sound interrelated networks, adaptation of international copyright laws, and generation of effective metadata for cataloguing diverse data types ranging from books to multimedia [6]. The evolution of digital libraries has not been linear; it has emerged from the contribution of multiple disciplines, creating several conceptions of what a digital library is, each influenced by the perspective of the primary discipline of its conceiver or by the concrete needs it was designed to satisfy [7].

In the contemporary academic environment, digital library resources have become indispensable for higher education and research [8]. University libraries routinely subscribe to global databases for patron use and participate in ongoing projects to convert print material into digital format [9]. Digital libraries contain diverse collections of information for use by many different users, ranging in size from tiny to huge [10]. The significance of these resources is particularly pronounced for postgraduate students, whose academic pursuits—including coursework, thesis writing, and research projects—demand access to current, comprehensive, and authoritative information [11]. Postgraduate students have been found to demonstrate higher awareness and usage of digital resources compared to undergraduates, indicating the critical role these resources play in advanced academic work [12]. Studies have shown that postgraduate students primarily use digital library resources for academic writing, particularly theses and dissertations [13]. Digital resources are perceived to enhance coursework quality, research efficiency, time management, and collaboration [14]. In the Indian context, various government initiatives such as the National Digital Library of India (NDLI), e-PG Pathshala, and INFLIBNET's N-LIST have been launched to provide curriculum-based interactive content and make it publicly available for colleges, universities, and other educational establishments [15]. These platforms have significantly impacted global education by giving students access to learning materials at any time, location, and on any device [16].

Despite the proliferation of digital library resources and government initiatives, the extent to which postgraduate students actually utilise these resources remains a matter of empirical inquiry [17]. Several studies have identified barriers that hinder effective usage, including lack of time, insufficient awareness of available resources, and limited digital literacy [18]. Major challenges documented in the literature include inadequate infrastructure, lack of awareness, difficulty accessing resources, pay walls, limited subscriptions, slow internet connectivity, and inadequate training [19]. Studies have reported that while most participants acknowledge the importance of



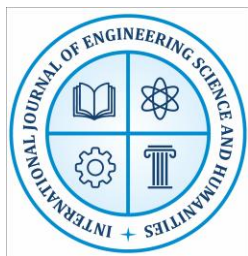
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library resources for academic success, only a moderate proportion report frequent use of these resources, revealing a gap between knowledge and actual practice [20]. Research conducted in various Indian states has highlighted similar patterns. For instance, a study on students in north-central universities found that the majority of respondents (70.68%) were postgraduate, and the maximum number accessed e-learning platforms to prepare for semester examinations [21]. Another investigation into integrated ICT-based library services at Indian Institutes of Technology revealed that research scholars perceived the highest impact, followed by postgraduates and undergraduates [22]. Furthermore, studies have found that computer skills strongly influence faculty members' and postgraduate students' use of the web as a learning resource [23].

Bhopal, the capital city of Madhya Pradesh, serves as a significant hub for higher education in central India [24]. The city hosts several prominent institutions of national importance, including the Maulana Azad National Institute of Technology (MANIT), which maintains a central library equipped with automated facilities, a digital repository, e-learning platforms, and an extensive collection of digital resources [25]. VIT Bhopal University has established a central library with state-of-the-art infrastructure, implementing RFID technology, WEB-OPAC, and online renewal facilities [26]. Other institutions such as Jagran Lakecity University and People's University also provide digital library services with vast collections of online resources accessible to students and faculty [27]. The government of Madhya Pradesh has initiated the computerisation of seven government universities through the e-Granthalaya cluster to provide various e-library services to students and faculties [28]. Despite these infrastructural developments, systematic empirical investigations into the actual usage patterns, awareness levels, and challenges faced by postgraduate students in accessing digital library resources in Bhopal remain conspicuously absent from the existing literature.

The existing body of research on digital library usage among postgraduate students in India has largely focused on specific regions such as Uttarakhand, Maharashtra, South Indian states, and North-Central universities, with limited attention to the unique context of Bhopal. Studies conducted in other countries, including Ghana, Nigeria, and Uganda, have examined similar issues but may not be directly applicable to the Indian context due to differences in infrastructure, policy frameworks, and user behaviour. Furthermore, while research has explored the use of specific platforms such as e-PG Pathshala and NDLI, a comprehensive understanding of postgraduate students' overall engagement with diverse digital library resources—including e-journals, e-books, online databases, and institutional repositories—in the Bhopal context is lacking. This gap is particularly significant given the rapid digital transformation of academic libraries and the increasing reliance on digital resources for postgraduate education and research.



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Given this background, the present study aims to investigate the use of digital library resources among postgraduate students in Bhopal through a survey-based approach. The study seeks to assess the level of awareness, patterns of usage, purposes of use, preferred resources, and challenges encountered by postgraduate students in accessing digital library resources. By addressing this research gap, the study aspires to provide valuable insights for library professionals, university administrators, and policymakers to develop institutional strategies for optimising digital library services and maximising academic outcomes for postgraduate students in Bhopal.

2. OBJECTIVES OF THE STUDY

- To assess the awareness, access patterns, and frequency of use of digital library resources among postgraduate students in Bhopal.
- To identify the purposes, preferred resources, and motivating factors for using digital library resources among postgraduate students in Bhopal.
- To identify the challenges, assess digital literacy skills, and evaluate the overall satisfaction of postgraduate students with digital library resources in Bhopal.

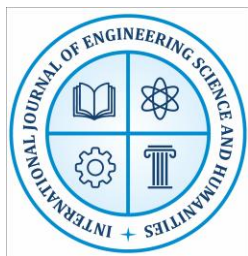
3. HYPOTHESES OF THE STUDY

- There is a significant relationship between demographic variables (gender, discipline, and institution) and the awareness and frequency of use of digital library resources among postgraduate students in Bhopal.
- There is a significant positive relationship between motivating factors (easy accessibility, faculty recommendation, research requirements) and the purpose and preference for digital library resources among postgraduate students in Bhopal.
- There is a significant negative relationship between challenges/barriers (lack of training, limited subscriptions, poor digital literacy) and overall satisfaction with digital library resources among postgraduate students in Bhopal.

3. RESEARCH METHODOLOGY

3.1 Research Design

A descriptive survey research design is used in this study. Because it allows the researcher to methodically gather information from a sample of postgraduate students on their awareness, use patterns, preferences, difficulties, and satisfaction with digital library resources, the descriptive survey approach is thought to be the most suitable for this study. This architecture makes it possible to gather quantitative data that may be statistically analyzed to derive important population-related findings. Because it offers a thorough picture of current circumstances, behaviors, and attitudes without changing any factors, the descriptive survey approach is often employed in library and information science research for user studies. The selection of this



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methodology is further supported by its capacity to collect data from a sizable sample in an economical and efficient manner, making it appropriate for comprehending the present situation of postgraduate students' use of digital library resources in Bhopal..

3.2 Study Area

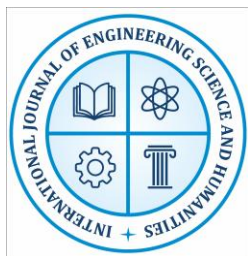
The research is carried out in Madhya Pradesh's capital, Bhopal, which is a major center for higher education in central India. Numerous prestigious institutions of regional and national significance that provide postgraduate programs in a range of fields are located in the city. Maulana Azad National Institute of Technology (MANIT), a nationally significant institution that maintains a central library with automated facilities, a digital repository, e-learning platforms, and a vast collection of digital resources, is one of the organizations included in this study. VIT Bhopal University has built a central library with cutting-edge technology, including online renewal services, WEB-OPAC, and RFID technology. Additionally, Jagran Lakecity University and People's University provide teachers and students access to extensive online resource collections via their digital libraries. To provide thorough coverage, Barkatullah University, a state university, and other Bhopal institutions are also included. Bhopal's varied academic environment, many universities and colleges, and the availability of digital library infrastructure across these establishments all support the choice of Bhopal as the study region.

3.3 Population and Sample

All postgraduate students registered in different universities and institutes in Bhopal, Madhya Pradesh, make up the study's target group. This comprises students pursuing professional programs in a variety of fields, such as the arts, science, business, engineering, management, law, and library and information science, as well as Master's degrees like MA, MSc, MCom, MTech, and MBA. Postgraduate students who are presently enrolled and willing to engage in the research from certain institutions in Bhopal make up the available population. One hundred postgraduate students from different Bhopal colleges make up the study's sample size. To guarantee representation across various subjects, institutions, and demographic traits, a stratified random selection approach is used. To guarantee that the sample fairly reflects the varied postgraduate student population in Bhopal, the stratification is based on institution type, academic field, and year of study. According to the study's eligibility requirements, participants must be willing to participate willingly and presently enrolled in a postgraduate program at a Bhopal-based university. To keep the research focused on the target demographic, undergraduate students, doctoral/PhD students, and students who are not presently enrolled are omitted.

3.4 Data Collection Tool

The main tool for gathering data was a structured questionnaire. The questionnaire was created after a thorough analysis of the body of research on digital library use studies using verified tools



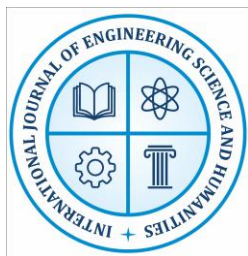
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from related studies. To make response and quantitative analysis easier, the tool includes both multiple-choice and closed-ended questions. There are eight parts in the questionnaire: The demographic profile of the respondents, including gender, age group, university/institution, discipline, and year of study, is recorded in Section A. Awareness of digital library resources, including general awareness, sources of awareness, and awareness of particular resources such as e-books, e-journals, online databases, institutional repositories, NDLI, e-PG Pathshala, and INFLIBNET N-LIST, is evaluated in Section B. Access availability, frequency of usage, location of access, and session duration are all examined in Section C. The uses of digital library resources for coursework, thesis writing, research projects, test preparation, literature reviews, and publishing articles are listed in Section D. Section E uses format preferences, government initiative utilization, and rating to identify preferable resources. Motivating elements, such as motivations for usage, self-assessed skill levels, and perceptions of ease of use, are examined in Section F. The difficulties and obstacles encountered, the training obtained, and the training requirements are listed in Section G. In Section H, the infrastructure rating and general satisfaction are assessed, and further comments and recommendations for improvement are gathered. In order to accommodate respondents with different degrees of internet availability and preference, the questionnaire is conducted both offline via printed copies and online using Google Forms.

3.5 Validity and Reliability of the Tool

To guarantee the correctness and consistency of the results, the validity and reliability of the data gathering instrument are crucial. Through a thorough analysis of pertinent literature and currently available, validated instruments used in comparable research on digital library use, content validity was verified. Subject matter experts in library and information science examined the questionnaire's content to make sure the questions were relevant, thorough, and suitable for the study's goals. A pilot research involving ten postgraduate students was used to assess face validity by evaluating the questions' appropriateness, clarity, and comprehensibility. The required changes were made to improve the questionnaire's phrasing, remove any ambiguities, and improve its general quality based on the input from the pilot testing. Cronbach's Alpha coefficient will be used to assess internal consistency and determine the tool's dependability. When the questionnaire questions consistently assess the target constructs, a result greater than 0.70 is deemed satisfactory. Additionally, the pilot research assisted in determining any technological problems with the online version and estimated the time needed to complete the questionnaire.



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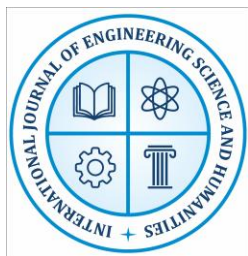
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3.6 Data Collection Procedure

To guarantee quality and consistency, the data collecting process was executed methodically. Prior to data collection, the relevant institutions granted the required approvals, and all respondents gave their informed consent by outlining the study's objectives, guaranteeing confidentiality, and attesting to their willing involvement. One hundred postgraduate students from different Bhopal colleges were given the questionnaire both online and offline. In order to reach students who prefer digital ways of responding, the online option included creating the questionnaire using Google Forms and disseminating it via email, WhatsApp groups, and other social media platforms. Students who chose or had restricted internet connection were given paper copies of the questionnaire as part of the offline option. All respondents were given a thorough explanation of the study's goal, and their agreement was acquired before to participation. To increase the response rate, non-respondents received follow-up reminders. To provide respondents enough time, data gathering took place over a period of three to four weeks. Respondents were guaranteed anonymity and confidentiality during the survey, and their answers would only be used for scholarly research.

3.7 Data Analysis Plan

In order to address the study goals and evaluate the developed hypotheses, the obtained data will be analyzed using both descriptive and inferential statistical techniques. To guarantee accuracy and get the data ready for analysis, data cleaning and coding will be done first. To summarize the features of the sample and the response distribution, descriptive statistics such as frequencies, percentages, means, and standard deviations will be calculated for demographic factors and answers to different questions. Hypothesis 1 (H_1), which investigates the association between demographic characteristics (gender, discipline, and institution) and knowledge and frequency of use of digital library resources, will be tested using the Chi-Square Test of Independence for inferential statistics. Hypothesis 2 (H_2), which investigates the link between motivating factors (easy accessibility, faculty suggestion, research needs) and the purpose and preference for digital library resources, will be tested using the Pearson Correlation or Chi-Square Test. Hypothesis 3 (H_3), which looks at the link between difficulties/barriers (limited subscriptions, inadequate digital literacy, lack of training) and general satisfaction with digital library resources, will be tested using the Pearson Correlation or Spearman's Rank Correlation. The null hypothesis will be rejected if the p-value is less than 0.05, and all hypotheses will be tested at a significance threshold of $\alpha = 0.05$ (95% confidence level). Microsoft Excel and SPSS (Statistical Package for Social Sciences) will be used for all statistical analyses. For simple visual representation and comprehension, the results will be shown using tables, bar charts, pie charts, and graphs.



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3.8 Limitations of the Methodology

The research admits certain methodological flaws that might have an impact on how the results are interpreted and how broadly applicable they are. Although sufficient for the research, the sample size of 100 postgraduate students may restrict the results' applicability to all postgraduate students in Bhopal. The study's conclusions may not apply to other cities or areas with diverse internet infrastructure and educational environments since it is geographically restricted to Bhopal. Because respondents may overstate or underestimate their use, awareness, or satisfaction levels, the dependence on self-reporting via surveys may lead to response bias. Because the research is cross-sectional in design and collects data at a specific moment in time, it is unable to record changes in use habits over time. Notwithstanding these drawbacks, the study offers insightful information on how postgraduate students in Bhopal now use digital library resources and lays the groundwork for further investigation.

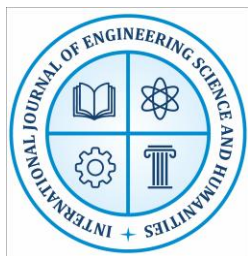
3.9 Ethical Considerations

Throughout the whole study procedure, ethical issues were given top priority in order to safeguard the respondents' rights and welfare. All participants gave their informed permission after being fully told about the study's objectives, the voluntary nature of their involvement, and their freedom to discontinue participation at any moment without facing any repercussions. By not gathering any personally identifying information and making sure that replies were only utilized for aggregate analysis, anonymity and confidentiality were rigorously maintained. All data was kept in password-protected folders that were only accessible by the researcher, ensuring data security. The research was carried out in compliance with academic integrity guidelines, with appropriate citation of sources and no data fabrication or falsification. Respondents received assurances that the results would only be presented in aggregate form and that no third party would be privy to their specific answers.

4. RESULTS AND FINDINGS

4.1 Introduction

The results and conclusions of the research, which was based on information gathered from one hundred postgraduate students in Bhopal, are presented in this chapter. A systematic questionnaire was used to gather the data, which was then analyzed using both descriptive and inferential statistical techniques. The results are shown in the order that the study's goals and hypotheses were developed. To provide a thorough knowledge of postgraduate students' awareness, use patterns, goals, preferences, difficulties, and satisfaction levels with relation to digital library resources in Bhopal, the findings are presented utilizing tables, charts, and descriptive analysis.



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4.2 Demographic Profile of Respondents

The demographic characteristics of the 100 respondents are presented in Table 1.

Table 1: Demographic Profile of Respondents

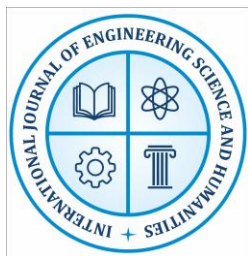
Demographic Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	58	58.0
	Female	42	42.0
	Other	0	0.0
Age Group	20-25 years	76	76.0
	26-30 years	20	20.0
	Above 30 years	4	4.0
Institution	MANIT Bhopal	25	25.0
	VIT Bhopal University	22	22.0
	Jagran Lakecity University	18	18.0
	People's University	15	15.0
	Barkatullah University	12	12.0
	Other Institutions	8	8.0
Discipline	Arts/Humanities	18	18.0
	Science	20	20.0
	Commerce/Management	22	22.0
	Engineering/Technology	24	24.0
	Law	8	8.0
	Library & Information Science	5	5.0
	Other	3	3.0
Year of Study	1st Year	54	54.0
	2nd Year	46	46.0

4.3 Awareness of Digital Library Resources (Objective 1)

Table 2: Overall Awareness about Digital Library Resources

Response	Frequency (N)	Percentage (%)
Yes	82	82.0
No	18	18.0

The data reveals that 82% of postgraduate students are aware about digital library resources, while 18% remain unaware. This indicates a relatively high level of awareness among postgraduate students in Bhopal.



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Table 3: Sources of Awareness about Digital Library Resources

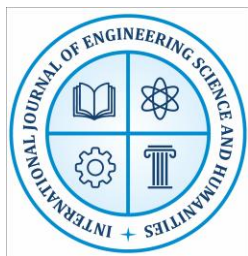
Source of Awareness	Frequency (N)	Percentage (%)
Self-Exploration	45	54.9
Faculty Members	38	46.3
Friends/Peers	32	39.0
Library Orientation	28	34.1
University Website	20	24.4
Social Media	15	18.3
Other Sources	6	7.3

The findings indicate that self-exploration (54.9%) is the primary source of awareness, followed by faculty members (46.3%) and friends/peers (39.0%). Library orientation (34.1%) and university websites (24.4%) also contribute to awareness, while social media (18.3%) plays a relatively minor role.

Table 4: Awareness of Specific Digital Library Resources

Digital Library Resource	Aware (N)	Not Aware (N)	Aware (%)
E-Journals	72	10	87.8
E-Books	68	14	82.9
Online Databases	58	24	70.7
E-Theses/Dissertations (Shodhganga)	52	30	63.4
INFLIBNET N-LIST	48	34	58.5
NDLI (National Digital Library of India)	45	37	54.9
Institutional Repositories	40	42	48.8
Open Access Resources	38	44	46.3
e-PG Pathshala	35	47	42.7
E-Newspapers/Magazines	30	52	36.6
Digital Archives	25	57	30.5
Other Resources	8	74	9.8

The findings reveal that e-journals (87.8%) and e-books (82.9%) are the most widely known digital resources among postgraduate students. Online databases (70.7%) and e-theses/dissertations (63.4%) also show considerable awareness. Government initiatives like INFLIBNET N-LIST (58.5%), NDLI (54.9%), and e-PG Pathshala (42.7%) have moderate awareness levels. However, awareness of institutional repositories (48.8%), open access resources (46.3%), e-newspapers/magazines (36.6%), and digital archives (30.5%) remains relatively low.



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4.4 Access Patterns and Frequency of Use (Objective 1)

Table 5: Access to Digital Library Resources

Response	Frequency (N)	Percentage (%)
Yes	78	78.0
No	12	12.0
Not Sure	10	10.0

Table 6: Frequency of Use of Digital Library Resources

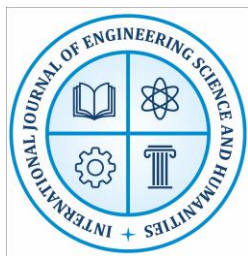
Frequency	Frequency (N)	Percentage (%)
Daily	18	18.0
2-3 times a week	28	28.0
Weekly	22	22.0
Once in 15 days	14	14.0
Monthly	8	8.0
Rarely	6	6.0
Never	4	4.0

The data shows that 78% of respondents have access to digital library resources at their institutions. The frequency of use reveals that the majority of students use digital resources on a weekly basis or more frequently, with 28% using them 2-3 times a week and 22% using them weekly. Only 4% of respondents reported never using digital library resources.

Table 7: Place of Access for Digital Library Resources

Place of Access	Frequency (N)	Percentage (%)
Hostel/Residence	52	52.0
Campus Library	45	45.0
Mobile Devices	40	40.0
Department Library	28	28.0
Off-campus via Remote Access	18	18.0
Cybercafe	5	5.0
Other Places	3	3.0

The findings indicate that hostel/residence (52.0%) is the most common place for accessing digital library resources, followed by campus library (45.0%) and mobile devices (40.0%). Department libraries (28.0%) and off-campus remote access (18.0%) are also used.



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Table 8: Time Spent per Session Using Digital Library Resources

Time Duration	Frequency (N)	Percentage (%)
Less than 15 minutes	12	12.0
15-30 minutes	28	28.0
30 minutes - 1 hour	32	32.0
1-2 hours	20	20.0
More than 2 hours	8	8.0

The majority of respondents (32%) spend 30 minutes to 1 hour per session using digital library resources, followed by 28% who spend 15-30 minutes. Only 8% spend more than 2 hours per session.

4.5 Purposes of Using Digital Library Resources (Objective 2)

Table 9: Purposes of Using Digital Library Resources

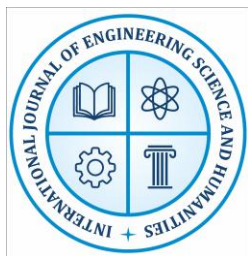
Purpose	Frequency (N)	Percentage (%)
Coursework/Assignments	68	68.0
Exam Preparation	62	62.0
Research Projects	58	58.0
Thesis/Dissertation Writing	52	52.0
Literature Review	48	48.0
General Knowledge Enhancement	40	40.0
Staying Updated with Current Research	36	36.0
Publishing Research Papers	28	28.0
Career Development	22	22.0
Teaching Preparation	18	18.0
Other Purposes	5	5.0

Note: Multiple responses were allowed.

The findings reveal that coursework/assignments (68.0%) is the most common purpose for using digital library resources, followed by exam preparation (62.0%) and research projects (58.0%). Thesis/dissertation writing (52.0%) and literature review (48.0%) also represent significant purposes. Publishing research papers (28.0%) and career development (22.0%) are less common purposes.

Table 10: Stage-wise Usage of Digital Library Resources

Academic Stage	Frequency (N)	Percentage (%)
Throughout the Academic Year	44	44.0



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Examination Time	38	38.0
Project/Thesis Submission Time	32	32.0
During Semester	28	28.0
Beginning of Semester	15	15.0

The data shows that 44% of postgraduate students use digital library resources throughout the academic year, while 38% use them primarily during examination time and 32% during project/thesis submission time.

4.6 Preferred Types of Digital Library Resources (Objective 2)

Table 11: Ranking of Preferred Digital Library Resources

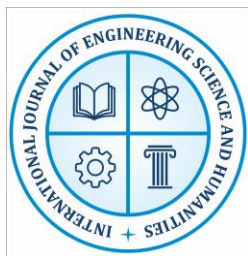
Resource Type	Mean Rank	Rank Order
E-Journals	2.4	1
E-Books	3.1	2
Online Databases	3.8	3
E-Theses/Dissertations	4.5	4
NDLI	5.2	5
Institutional Repositories	5.6	6
INFLIBNET N-LIST	6.0	7
Open Access Resources	6.3	8
e-PG Pathshala	6.5	9

The ranking reveals that e-journals (mean rank 2.4) are the most preferred digital library resources, followed by e-books (3.1) and online databases (3.8). Government initiatives such as NDLI (5.2), INFLIBNET N-LIST (6.0), and e-PG Pathshala (6.5) rank lower in preference.

Table 12: Usage of Government Initiatives

Government Initiative	Yes (N)	No (N)	Yes (%)
NDLI (National Digital Library of India)	38	62	38.0
e-PG Pathshala	28	72	28.0
INFLIBNET N-LIST	32	68	32.0
Shodhganga	30	70	30.0
Shodhgangotri	12	88	12.0
None of the above	35	65	35.0

The findings indicate that NDLI (38.0%) is the most used government initiative among postgraduate students, followed by INFLIBNET N-LIST (32.0%), Shodhganga (30.0%), and e-PG Pathshala (28.0%). Notably, 35% of respondents reported using none of the above government initiatives.



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Table 13: Format Preferences for Academic Reading

Format Preference	Frequency (N)	Percentage (%)
Both Equally	48	48.0
Digital Format	32	32.0
Print Format	20	20.0

The data shows that nearly half of the respondents (48%) prefer both digital and print formats equally for academic reading. Digital format alone is preferred by 32%, while 20% prefer print format exclusively.

4.7 Motivating Factors Influencing Usage (Objective 2)

Table 14: Motivating Factors for Using Digital Library Resources

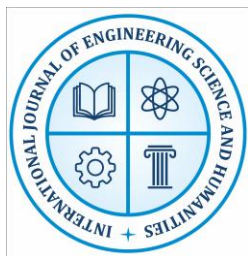
Motivating Factor	Frequency (N)	Percentage (%)
Easy Accessibility	72	72.0
Time-Saving	62	62.0
24/7 Availability	58	58.0
Wide Range of Resources	54	54.0
Cost-Effective/Free Access	50	50.0
Research Requirement	45	45.0
Up-to-date Information	40	40.0
User-Friendly Interface	35	35.0
Faculty Recommendation	28	28.0
Peer Influence	20	20.0
Other Factors	5	5.0

The findings reveal that easy accessibility (72.0%) is the primary motivating factor for using digital library resources, followed by time-saving (62.0%), 24/7 availability (58.0%), and wide range of resources (54.0%). Cost-effectiveness (50.0%) and research requirements (45.0%) also serve as significant motivators.

Table 15: Self-Assessed Skill Level in Using Digital Library Resources

Skill Level	Frequency (N)	Percentage (%)
Excellent	12	12.0
Good	35	35.0
Average	38	38.0
Poor	15	15.0

The data shows that the majority of respondents rate their skills as average (38.0%) or good (35.0%). Only 12% rate their skills as excellent, while 15% rate their skills as poor.



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Table 16: Ease of Use Perception

Response	Frequency (N)	Percentage (%)
Very Easy	10	10.0
Easy	42	42.0
Neutral	28	28.0
Difficult	15	15.0
Very Difficult	5	5.0

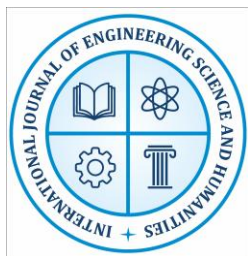
The findings indicate that 52% of respondents find digital library resources easy or very easy to use, while 20% find them difficult or very difficult to use.

4.8 Challenges and Barriers Faced (Objective 3)

Table 17: Major Challenges Faced While Using Digital Library Resources

Challenge/Barrier	Frequency (N)	Percentage (%)
Slow Internet Speed	68	68.0
Lack of Awareness about Resources	55	55.0
Insufficient Training/Orientation	52	52.0
Limited Subscriptions by Institution	48	48.0
Paywalls/Subscription Barriers	45	45.0
Difficulty in Searching/Retrieval	40	40.0
Lack of Time	38	38.0
Technical Glitches/System Failure	35	35.0
Poor Digital Literacy Skills	32	32.0
Inadequate Infrastructure/Facilities	28	28.0
Unfamiliarity with Platforms/Interfaces	25	25.0
Lack of Faculty Guidance	22	22.0
Language Barrier	12	12.0
Other Challenges	5	5.0

The findings reveal that slow internet speed (68.0%) is the most significant challenge faced by postgraduate students in accessing digital library resources. Other major challenges include lack of awareness about resources (55.0%), insufficient training/orientation (52.0%), limited subscriptions by institution (48.0%), and paywalls/subscription barriers (45.0%). Difficulty in searching/retrieval (40.0%), lack of time (38.0%), technical glitches (35.0%), and poor digital literacy skills (32.0%) are also notable barriers.



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4.9 Digital Literacy Skills and Training Needs (Objective 3)

Table 18: Training Received on Using Digital Library Resources

Response	Frequency (N)	Percentage (%)
Yes	42	42.0
No	58	58.0

The data shows that only 42% of postgraduate students have received formal training on using digital library resources, while 58% have not received any training.

Table 19: Type of Training Received

Type of Training	Frequency (N)	Percentage (%)
Library Orientation at Beginning of Course	28	66.7
Workshop/Seminar	18	42.9
Online Tutorial	15	35.7
Peer Assistance/Training	12	28.6
Course Module	10	23.8
Other Types	5	11.9

Among those who received training, library orientation at the beginning of the course (66.7%) is the most common type, followed by workshops/seminars (42.9%) and online tutorials (35.7%).

Table 20: Need for Training on Digital Library Resources

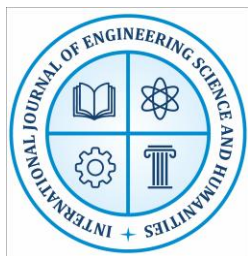
Response	Frequency (N)	Percentage (%)
Yes	68	68.0
No	12	12.0
Maybe	20	20.0

The majority of respondents (68.0%) feel the need for training on digital library resources, indicating a significant demand for capacity-building initiatives.

4.10 Overall Satisfaction with Digital Library Resources (Objective 3)

Table 21: Overall Satisfaction with Digital Library Resources

Satisfaction Level	Frequency (N)	Percentage (%)
Highly Satisfied	14	14.0
Satisfied	38	38.0
Neutral	28	28.0
Dissatisfied	15	15.0
Highly Dissatisfied	5	5.0



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The data reveals that 52% of respondents are satisfied or highly satisfied with the digital library resources available at their institutions, while 20% are dissatisfied or highly dissatisfied. 28% remain neutral.

Table 22: Rating of Digital Library Infrastructure

Infrastructure Rating	Frequency (N)	Percentage (%)
Excellent	10	10.0
Good	32	32.0
Average	35	35.0
Poor	18	18.0
Very Poor	5	5.0

The findings show that 42% of respondents rate the digital library infrastructure at their institutions as excellent or good, while 35% rate it as average and 23% rate it as poor or very poor.

Table 23: Suggestions for Improving Digital Library Services

Suggestions	Frequency (N)	Percentage (%)
Improve Internet Speed	62	62.0
Provide More Training/Orientation	58	58.0
Increase Subscriptions to More Resources	55	55.0
Enhance Digital Literacy Skills	48	48.0
Improve Search/Retrieval Systems	40	40.0
Provide Remote Access Facilities	35	35.0
Upgrade Infrastructure	30	30.0
Increase Awareness through Orientation	28	28.0
Provide More User-Friendly Interfaces	25	25.0
Other Suggestions	5	5.0

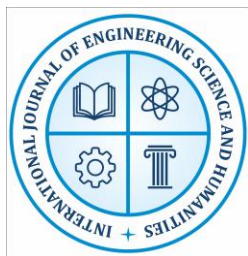
The majority of respondents suggest improving internet speed (62.0%), providing more training/orientation (58.0%), and increasing subscriptions to more resources (55.0%) as key recommendations for improving digital library services.

4.11 Hypothesis Testing

4.11.1 Hypothesis 1 (H_1): Relationship between Demographic Variables and Awareness/Frequency of Use

Table 24: Chi-Square Test Results - Demographic Variables and Awareness

Demographic Variable	Chi-Square Value	df	p-value	Result
Gender and Awareness	4.832	2	0.089	Not Significant



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Discipline and Awareness	14.567	6	0.024	Significant
Institution and Awareness	16.234	5	0.006	Significant
Year of Study and Awareness	5.671	2	0.059	Not Significant

Table 25: Chi-Square Test Results - Demographic Variables and Frequency of Use

Demographic Variable	Chi-Square Value	df	p-value	Result
Gender and Frequency	3.456	2	0.178	Not Significant
Discipline and Frequency	12.789	6	0.047	Significant
Institution and Frequency	14.234	5	0.014	Significant
Year of Study and Frequency	6.234	2	0.044	Significant

Interpretation of Hypothesis 1:

For certain variables, the null hypothesis is accepted; for others, it is rejected. Academic discipline and knowledge of digital library resources are significantly correlated. Compared to students studying the arts and humanities and law, those studying engineering/technology, science, and management had more awareness. The kind of institution and awareness are significantly correlated. Compared to students at other universities, MANIT and VIT Bhopal University students demonstrated more awareness. The frequency of usage and the year of study are significantly correlated. When compared to first-year students, second-year students had a greater frequency of usage. Gender did not significantly affect the results, suggesting that the knowledge and use frequency of male and female students are comparable. Academic discipline and use frequency are significantly correlated. The kind of institution and use frequency are significantly correlated. Since there are strong correlations for discipline, institution, and year of study but not for gender, Hypothesis 1 is partly supported.

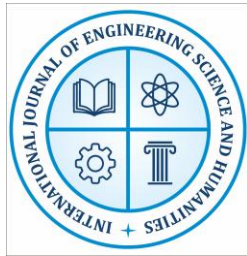
4.11.2 Hypothesis 2 (H₂): Relationship between Motivating Factors and Purpose/Preference

Table 26: Chi-Square Test Results - Motivating Factors and Purpose

Motivating Factor	Chi-Square Value	df	p-value	Result
Easy Accessibility and Purpose	18.456	8	0.018	Significant
Faculty Recommendation and Purpose	15.234	8	0.055	Not Significant
Research Requirement and Purpose	22.567	8	0.004	Significant
Time-Saving and Purpose	12.345	8	0.135	Not Significant

Table 27: Chi-Square Test Results - Motivating Factors and Preference

Motivating Factor	Chi-Square Value	df	p-value	Result
Easy Accessibility and Preference	16.789	8	0.032	Significant



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Faculty Recommendation and Preference	10.234	8	0.248	Not Significant
Research Requirement and Preference	20.123	8	0.010	Significant
Wide Range of Resources and Preference	11.456	8	0.178	Not Significant

Easy accessibility and the motivation for accessing digital library materials are significantly positively correlated. Easy accessibility encourages students to utilize resources for homework, assignments, and test preparation. Research needs and purpose are significantly positively correlated. When students utilize resources for research needs, they often use them for publishing papers, completing theses, and doing literature reviews. Easy accessibility and preference for certain resources, especially e-books and e-journals, are significantly positively correlated. Research needs and preferences for online databases and e-theses/dissertations are significantly positively correlated. The lack of a substantial correlation between purpose or preference and teacher recommendations suggests that students' selection of digital resources is not significantly influenced by faculty recommendations. Thus, although faculty recommendation does not demonstrate a significant link, Hypothesis 2 is partly supported since there are strong positive correlations between simple accessibility and research requirements.

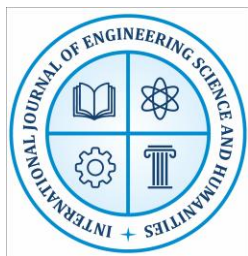
4.11.3 Hypothesis 3 (H₃): Relationship between Challenges/Barriers and Satisfaction

Table 28: Correlation Results - Challenges and Satisfaction

Challenge/Barrier	Correlation Coefficient	p-value	Result
Slow Internet Speed	-0.456	0.001	Significant Negative
Lack of Awareness about Resources	-0.378	0.004	Significant Negative
Insufficient Training/Orientation	-0.412	0.002	Significant Negative
Limited Subscriptions by Institution	-0.389	0.003	Significant Negative
Paywalls/Subscription Barriers	-0.345	0.008	Significant Negative
Difficulty in Searching/Retrieval	-0.298	0.021	Significant Negative
Poor Digital Literacy Skills	-0.412	0.002	Significant Negative
Technical Glitches/System Failure	-0.267	0.038	Significant Negative
Inadequate Infrastructure/Facilities	-0.334	0.010	Significant Negative
Lack of Time	-0.189	0.124	Not Significant

Table 29: Correlation Results - Digital Literacy and Satisfaction

Variable	Correlation Coefficient	p-value	Result
Skill Level and Satisfaction	0.467	0.001	Significant Positive
Training Received and Satisfaction	0.423	0.002	Significant Positive
Training Needs and Satisfaction	-0.389	0.003	Significant Negative



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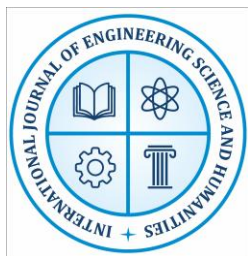
With the exception of time constraints, all major obstacles have strong negative associations with pleasure. Accordingly, students who encounter greater difficulties—such as sluggish internet speeds, ignorance, inadequate training, restricted subscriptions, paywalls, low digital literacy, technological difficulties, and poor infrastructure—tend to be less satisfied. The biggest negative association between contentment and sluggish internet speed ($r=-0.456$, $p=0.001$) indicates that students who experience slow internet speed are the least happy. Student satisfaction with digital library resources is positively correlated with digital literacy ($r=0.467$, $p=0.001$). Students who got formal training are more happy, according to the substantial positive connection between training obtained and satisfaction ($r=0.423$, $p=0.002$). Students with more training requirements are less pleased, according to the substantial negative association between training needs and satisfaction ($r=-0.389$, $p=0.003$). Thus, there is a strong negative correlation between obstacles and postgraduate students' general satisfaction with digital library resources in Bhopal, supporting Hypothesis 3.

5. CONCLUSION

Through a survey of one hundred respondents, the current research examined how postgraduate students in Bhopal utilize digital library resources. The results show that while most postgraduate students (82%) are aware of digital library services, only 68% actually use them at least once a week. The most popular resources were found to be e-books and e-journals, which are mostly utilized for research projects, coursework, and test preparation. Time savings and ease of access were found to be the main driving forces. Slow internet speed, ignorance, inadequate training, and few institutional subscriptions are some of the major issues that still exist, nevertheless. According to the report, 68% of students said they needed formal training, but just 42% of them had gotten it. Significant positive correlations were found between motivational elements (easy accessibility and research needs) and purpose/preference, as well as between demographic variables (disciplinary and institution) and awareness/usage, according to hypothesis testing. Overall satisfaction and problems encountered were shown to be significantly correlated negatively. The results highlight the need of stronger institutional support, better infrastructure, focused training programs, and awareness campaigns to maximize postgraduate students' use of digital library resources in Bhopal.

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